

**MANAGEMENT RESPONSE TO
REQUEST FOR INSPECTION PANEL REVIEW OF THE
KENYA - ENERGY SECTOR RECOVERY PROJECT
(IDA Credit No. 3958-KE) AND THE
KENYA ENERGY SECTOR RECOVERY PROJECT ADDITIONAL
FINANCING (IDA Credit No. 4572-KE)**

Management has reviewed the Request for Inspection of the Kenya - Energy Sector Recovery Project (IDA Credit No. 3958-KE) and the Kenya Energy Sector Recovery Project Additional Financing (IDA Credit No. 4572-KE), received by the Inspection Panel on May 10, 2012 and registered on May 24, 2012 (RQ12/02). Management has prepared the following response.

June 25, 2012

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ABBREVIATIONS AND ACRONYMS

BP	Bank Procedures
CCN	City Council of Nairobi
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
ELF	Extremely Low Frequency
EMF	Electric and Magnetic Field
EMR	Electromagnetic Radiation
EMP	Environmental Management Plan
ESMP	Environmental and Social Management Plan
ESRP	Energy Sector Recovery Project
EU	European Union
dB(A)	Decibel (A-weighted)
GDP	Gross Domestic Product
IDA	International Development Association
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEC	International Electrotechnical Commission
IPN	Inspection Panel
ISDS	Integrated Safeguards Data Sheet
ISO	International Organization for Standardization
KPLC	Kenya Power & Lighting Company Limited
kV	Kilovolt
kVA	Kilovolt ampere
LAeq	Equivalent continuous A-weighted sound pressure level
MVA	Megavolt ampere
μT	Microtesla
NEMA	National Environment Management Authority
NET	National Environmental Tribunal
NRRA	Njumbi Road Residents' Association
OECD	Organization for Economic Cooperation and Development
OMS	Operational Manual Statement
OP	Operational Policy
SHE	Safety, Health and Environment Department, KPLC
TTL	Task Team Leader
WB	World Bank

WBG	World Bank Group
WHO	World Health Organization
WRMA	Water Resources Management Authority

Currency Unit
(Exchange Rate as of June 25, 2012)
1 US\$ = KSh 82
1 KSh = 0.01 US\$

EXECUTIVE SUMMARY

1. On May 24, 2012, the Inspection Panel registered a Request for Inspection (hereafter referred to as “the Request”), concerning the Kenya – Energy Sector Recovery Project (ESRP) and the Kenya – Energy Sector Recovery Project Additional Financing, financed by the International Development Association (“the Bank”).

The Project

2. **Project Background:** Despite successful sector reforms, electricity supply in Kenya remains unreliable. Electricity shortfalls and supply interruptions have been costly and have constrained the competitiveness of Kenyan businesses in the international market. The lack of adequate, reliable electricity supply is one of Kenya’s largest infrastructure challenges and a key constraint to growth and poverty reduction. Unreliable electricity supply in recent years has led to economic losses on the order of two percent of GDP and the disruption of public power supply burdens the Kenyan economy.

3. The Kenya – Energy Sector Recovery Project (ESRP) supports Kenya in the reform of the energy sector and provides support for investments in physical infrastructure of the energy sector. The ESRP was approved by the Bank’s Board on July 13, 2004. Additional financing for the ESRP was approved by the Bank’s Board on April 2, 2009 with the aim to scale up selected activities and to compensate for financing shortfalls in the original project.

4. The project development objectives/outcomes of the Additional Financing project have been revised to the following: (i) enhance the policy, institutional and regulatory environment for sector development including private sector participation; and (ii) increase access to electricity in urban and peri-urban areas while improving the efficiency, reliability and quality of service to consumers. The project pursues its objective through four components. As part of the power distribution component, the Additional Financing Credit finances six priority transformer substations in industrial and residential areas of Nairobi that are experiencing high electricity demand growth. The substations will help reduce losses and will improve the reliability of power supply.

5. The Lavington substation, which is the subject of the Request, is one of the substations financed under the Additional Financing. Once operational this substation will step down incoming 66 kV power supply to 11 kV which will be distributed to street level pole transformers delivering 240 V consumer current to households. Construction of the substation started in May 2011 and to date is about 80 percent completed, but the substation has not yet been commissioned.

The Request for Inspection

6. The Request for Inspection was submitted by Mr. Peter Usher, on behalf of the Njumbi Road Residents’ Association (NRRA) (hereafter referred to as the “Requesters”).

7. The Requesters claim that the construction of the substation is not compliant with local and national laws including those concerning zoning, change of use, licensing and environmental protection, nor with Bank policy. They further assert that the Environmental Impact Assessment (EIA) for the substation is deficient and has not been properly consulted upon and that the substation would pose potential health hazards from electromagnetic radiation and accidents such as fires and explosions. The Requesters also maintain that the value of their real estate would be negatively affected by the substation's proximity. The Requesters are also dissatisfied with the Bank's responsiveness to their complaints. Overall, the Requesters express the demand that the substation be moved away from their residences to a different location.

Management's Response

8. ***Management understands the concerns of the Requesters regarding potential environmental, health and safety impacts that might arise from an electrical substation in an urban area.*** Management is committed to ensure that the project complies with all relevant environmental, health and safety regulations. Management considers that the mitigation measures of the Environmental Management Plan (EMP) of the project have been fully and properly implemented to date and will ensure that they continue to be as the substation becomes operational. It will also take actions to ensure enhanced environmental management capacity of the Kenya Power & Lighting Company Limited (KPLC) as well as measures to improve the aesthetic appearance of the substation.

9. ***However, in Management's view the Requesters are not able to demonstrate that their rights or interests have been or will be, directly and adversely affected by a failure of the Bank to implement its policies and procedures.*** Management believes that the concerns raised by the Requesters are appropriately addressed by adequate mitigation and safety measures that the project has put in place. Management also notes that there is sufficient scientific evidence to dispel the Requesters' concerns regarding health impacts.

10. ***The Request for Inspection is in large part about the project's proximity to the Requesters' residences and their discontent with the associated visual impacts as well as alleged health and safety concerns.*** Among the Requesters' concerns is that the proximity of the project allegedly negatively impacts their real estate values. In Management's view this concern mainly illustrates the challenge of supporting development of essential infrastructure in a densely populated urban setting, such as Nairobi.

11. ***In a densely populated urban setting the adverse impacts of building and operating essential urban infrastructure, such as a power substation which will serve the entire community, have to be jointly borne by residents and may affect some residents more than others.*** This is especially the case for infrastructure components that are related to the distribution of local services and which cannot be moved outside the city or away from residences. This may at times compete with residents' preferences.

12. ***Management submits that power substations are a common and essential infrastructure in urban settings worldwide, and that their components including transformers are a known and tested technology that has been used for more than a century.*** The Bank-supported project observes the relevant safety regulations and follows international best practice. As would be the case anywhere in the world, a distribution substation's ideal location must be close to the center where electricity demand is concentrated. Moving it away from the demand center would result in higher distribution technical losses which would have to be borne by all consumers.

13. ***Management notes that the Requesters specifically ask to have the substation moved away from the vicinity of their properties and moved to the vicinity of other residents' property.*** The Requesters propose locations which are adjacent to other residential dwellings. Management also notes that while the Requesters wish to have the substation moved away from their residences, they also complain about the deficient and unreliable power supply provided by KPLC. It is important to note that the project specifically addresses these power supply shortfalls and will contribute to improving the quality and reliability of power distribution in the area.

Specific Issues Raised in the Request

14. ***Legal issues: Management notes that the concerns expressed in the Request concerning the compliance of the construction with local and national laws have been submitted to a national legal process and are currently under consideration.*** Given the history of the dispute between the Requesters and KPLC and the complexity of the ongoing national legal process, it would not be appropriate for Management to comment on this process or anticipated outcomes.

15. ***Regarding the change of use and zoning issues,*** KPLC has provided the Bank with the relevant documentation of the land zoning process which indicates that the process was consistent with what Management understands to be the applicable legal process for obtaining approval for land use changes.

16. ***Environmental Assessment: While Management is of the view that the EIA is technically adequate and appropriate for a subproject of the nature and size of the substation, it recognizes that the initial consultations for the EIA were uneven and that these were subsequently supplemented by more substantial consultations.*** The Bank has reviewed the consultation documentation and notes that as described in these documents the process appears to have been appropriate for a subproject of this size and nature. These consultation minutes indicate that considered responses and adequate mitigation measures were proposed to deal with a number of stakeholder concerns. Management notes that the Lavington site is in an urban area and not an environmentally important area and contrary to the Requesters' assertion there is no wetland (protected area) in Lavington. In fact, there is no gazetted wetland anywhere in the Nairobi area.

17. ***Health concerns: Management has carefully analyzed the Requesters' concerns about electromagnetic radiation (EMR) from the substation and concluded that the***

scientific consensus is that no known health impacts can be linked to the electromagnetic exposure that is expected to stem from the project. Internationally recognized radiation protection agencies and national health agencies have also reviewed the scientific evidence available and have concluded that it is insufficient to establish a definitive causal relationship between low frequency magnetic field exposure and increased incidences of cancer and other illnesses. ***The electromagnetic radiation emissions that can be expected from the substation, as from any electrical supply line, are expected to be well within internationally accepted exposure limits that have been adopted by most countries in the Organization for Economic Cooperation and Development (OECD), including the European Union (EU).***

18. **Safety concerns:** *In Management's view the risks related to construction and operation of a substation are considered to be moderate and manageable and are sufficiently addressed in the subproject's EMP.* Implementation of the EMP will be closely monitored by the Bank team. Concerning the minimum clearances between transformers and circuit lines and residences, Management has verified that these are in line with applicable legal requirements. Management has also found that in a number of OECD countries the minimum safety clearance between residences and transmission lines is as low as 6 to 7 meters.

19. **Alleged impact on property values:** Management is unable to confirm the loss in real estate value referred to by the Requesters and notes that based on international experience, it is often difficult to isolate or quantify the effect – negative or positive – of electricity connectivity infrastructure on adjoining properties. The impact of development on the values of adjoining properties is not an issue dealt with specifically in the Bank's safeguard policies. The consultations conducted as part of the environmental assessment process provide an opportunity for those affected by development to raise concerns about any impacts they consider important, including as the case may be, concerns about property values and possible ways of mitigating such effects. As a result of consultations with stakeholders, KPLC has proposed some additional mitigation measures to address aesthetic, safety and other concerns, such as the planting of trees, placing feeders underground, and limiting tree felling to the extent possible.

20. **Bank responsiveness to Requesters:** Following the Bank team's receipt of the Requesters' complaints in April 2011 the Bank promptly followed up with KPLC and obtained responses and documentation on the process of land acquisition and change of use. When the Bank team received further complaints from the Requesters in March 2012 it visited the site and met with KPLC. The Bank team met with the Requesters' representative and two other residents on June 12, 2012 on the site of the substation to further discuss the concerns raised in the Request for Inspection, and also visited adjoining residences. However, Management acknowledges that the Bank team in the past had focused primarily on following up on the Requesters' complaints with KPLC internally, rather than maintaining direct contact with the Requesters.

Conclusion

21. ***Management believes that the Bank has made every effort to apply its policies and procedures and to pursue concretely its mission statement in the context of the project.*** In Management's view, the Bank has followed the guidelines, policies and procedures applicable to the matters raised by the Request. As a result, Management believes that the Requesters' rights or interests have not been, nor will they be, directly and adversely affected due to a failure of the Bank to implement its policies and procedures.

22. ***However, in order to improve project implementation and to ensure that the mitigation measures spelled out in the EMP are effective, Management suggests a set of measures that are presented in the main text.*** These steps are not related to issues of compliance with Bank policy but would address concerns expressed by the Requesters. Such measures would include visual mitigation measures, reviewing security arrangements and arranging for third party monitoring of construction and operation related impacts, all of which are in line with the project's EMP.

I. INTRODUCTION

1. On May 24, 2012, the Inspection Panel registered a Request for Inspection, IPN Request RQ 12/02 (hereafter referred to as “the Request”), concerning the Kenya – Energy Sector Recovery Project (ESRP) and the Kenya – Energy Sector Recovery Project Additional Financing, financed by the International Development Association (the Bank).
2. ***Structure of the Text.*** The document contains the following sections: Section 1 is the Introduction; Section II describes the Request; Section 3 provides project background; and Section IV presents Management’s response. Annex 1 contains the Requesters’ claims, together with Management’s detailed responses, in table format. Additional annexes include information on land acquisition, the substation environmental assessment, a chronology of correspondence, and site photographs.

II. THE REQUEST

3. The Request for Inspection was submitted by Mr. Peter Usher, on behalf of the Njumbi Road Residents’ Association (NRRA) (hereafter referred to as the “Requesters”).
4. Attached to the Request are:
 - (i) NRRA authorization for Peter Usher to represent the Association in the matter of complaint to the World Bank (WB) Inspection Panel;
 - (ii) Signatories supporting the NRRA complaint;
 - (iii) Detailed complaint submission;
 - (iv) Correspondence between NRRA and the World Bank concerning the complaint;
 - (v) Letter from a Njumbi Road resident, a former senior City Council of Nairobi (CCN) official in the City Planning Department regarding zoning regulations for the project site;
 - (vi) Evaluation of Risks relating to Electro-magnetic Radiation and Electro Low Frequency Radiation; and
 - (vii) Extract from Kenya Power and Lighting Company (KPLC) Environmental Impact Assessment (EIA) indicating adverse impacts of the project.
5. No further materials were received by Management in support of the Request.

6. The following claims are presented by the Requesters:
- The construction of the substation is not compliant with local and national laws including those concerning zoning, change of use, licensing and environmental protection, as well as with Bank policy;
 - The EIA for the substation is deficient and also has not been properly consulted upon;
 - The substation poses potential health issues from radiation and accidents such as fires and explosions, and will subject the residents close by to unacceptable noise levels;
 - The value of the Requesters' real estate will be negatively affected by the substation's proximity; and
 - The Bank has not been responsive to the Requesters.
7. The Request contains claims that the Panel has indicated may constitute violations by the Bank of various provisions of its policies and procedures, including the following:
- OMS 2.20, Project Appraisal;
 - OP/BP 4.01, Environmental Assessment; and
 - OP/BP 13.05, Project Supervision.

III. PROJECT BACKGROUND

The Project

8. The ESRP (IDA credit of US\$80 million) supports Kenya in the reform of the energy sector and provides support for investments in physical infrastructure. The ESRP was approved by the Bank's Board on July 13, 2004.
9. Despite successful sector reforms, electricity supply in Kenya remains unreliable. Electricity shortfalls and supply interruptions have been costly and have constrained the competitiveness of Kenyan businesses in the international market. The Bank's Africa Infrastructure Country Diagnostic found that the lack of adequate, reliable electricity supply is Kenya's largest infrastructure challenge and a key constraint to growth and poverty reduction. Unreliable electricity supply in recent years has led to economic losses on the order of two percent of GDP. In financial terms, the disruption of public power supply

costs Kenyan firms approximately seven percent of their annual sales revenues, a level of financial loss that is higher than that of other countries at a similar stage of economic development.

10. Additional financing (IDA credit of US\$80 million) for the ESRP was approved by the Bank's Board on April 2, 2009 with the aim to scale up selected activities and to compensate for financing shortfalls in the original project. The European Investment Bank, the Agence Française de Développement, and the Nordic Development Fund are supporting the project through co-financing.

Project Objectives

11. The project development objectives/outcomes of the additional financing project have been revised to the following:

- Enhance the policy, institutional and regulatory environment for sector development including private sector participation; and
- Increase access to electricity in urban and peri-urban areas while improving the efficiency, reliability, and quality of service to consumers.

12. For the additional financing of the ESRP, the project was restructured to scale-up activities to enhance the impact of the project, to cover the financing shortfall for some project components and to increase its development impact by improving the quality of the results monitoring framework.

Project Components

13. **Project Components.** The four project components designed to meet ESRP's objectives are the following:

- Institutional and Capacity Building;
- Studies and Engineering Services;
- Generation – Third Unit of the Olkaria II Geothermal Power Station; and
- Distribution – Electricity Distribution System Upgrade.

14. As part of the Distribution component, the Additional Financing Credit finances six priority transformer substations in industrial and residential areas of Nairobi that are experiencing high electricity demand growth. The substations will help reduce losses beyond the targets that can be achieved by the project's original investments and will also improve the reliability of supply in the project areas. The new investments will help improve the quality of electricity supply by reducing voltage fluctuations and losses, and enable connection of additional customers. In particular, the investments will help KPLC reduce distribution losses to levels mandated by the Regulator.

15. The construction of the Lavington substation, which is the subject of the Request, is one of the substations to be financed under the Additional Financing.¹ This substation will have a 66 kV incoming sub-transmission line with several 11 kV feeder lines going out. The incoming 66 kV voltage will be stepped down through two 18/23 MVA transformers in the substation to 11 kV. The outgoing 11 kV lines will be stepped down to 240 V for household supply current by pole-mounted transformers which are located outside the substation close to residences.

16. *Status of the project.* The substation is currently approximately 80 percent completed, but has not yet been commissioned (see pictures in Annex 5).

IV. MANAGEMENT'S RESPONSE

17. The Requesters' claims, accompanied by Management's detailed responses, are provided in Annex 1.

18. *Management understands the concerns of the Requesters regarding potential environmental, health and safety impacts that might arise from an electrical substation in an urban area.* Management is committed to ensure that the project complies with all relevant environmental, health and safety regulations. Management considers that the mitigation measures of the Environmental Management Plan (EMP) of the project have been fully and properly implemented to date and will ensure that they continue to be as the substation becomes operational. It will also take actions to ensure enhanced environmental management capacity of KPLC as well as measures to improve the aesthetic appearance of the substation.

19. *However, in Management's view the Requesters are not able to demonstrate that their rights or interests have been or will be, directly and adversely affected by a failure of the Bank to implement its policies and procedures.* Management believes that the concerns raised by the Requesters are appropriately addressed by adequate mitigation and safety measures that the project has put in place. Management also notes that there is sufficient scientific evidence to dispel the Requesters' concerns regarding health impacts.

20. *The Request for Inspection is in large part about the project's proximity to the Requesters' residences and their discontent with the associated visual impacts as well as alleged health and safety concerns.* Among the Requesters' concerns is that the proximity of the project allegedly negatively impacts their real estate values. In Management's view this concern mainly illustrates the challenge of supporting development of essential infrastructure in a densely populated urban setting, such as Nairobi.

¹ The contract valued at US\$11,843,711 for construction of the Lavington substation and two other substations (Ngong Town and Langata) was awarded to National Contracting Company of Saudi Arabia. The contract was signed on February 5, 2010.

21. ***In a densely populated urban setting the adverse impacts of building and operating essential urban infrastructure, such as a power substation which will serve the entire community, have to be jointly borne by residents and may affect some residents more than others.*** This is especially the case for infrastructure components that are related to the distribution of local services and which cannot be moved outside the city or away from residences. This may at times compete with residents' preferences.

22. ***Management submits that power substations are a common and essential infrastructure in urban settings worldwide, and that their components including transformers are a known and tested technology that has been used for more than a century.*** The Bank-supported project observes the relevant safety regulations and follows international best practice and does not subject the Requesters to an "experiment", as they claim. As would be the case anywhere in the world, a distribution substation's most efficient location will be close to the demand center (i.e., to where electricity demand is concentrated). Moving it away from the demand center would result in higher distribution losses which would have to be borne by all consumers and would reduce the supply reliability improvements that the project aims to achieve.

23. ***Management notes that the Requesters specifically ask to have the substation moved away from the vicinity of their properties and hence moved to the vicinity of other residents' property.*** The Requesters' demand that KPLC find "alternative and more appropriate sites" for the substation ignores the technical requirements for the substation's location. The Requesters also propose a location to the south of the current site, which would place the substation adjacent to other residential dwellings. While the Requesters wish to have the substation moved away from their residences, they do complain about the deficient power supply and that KPLC "cannot maintain a continuous power supply to the area." and that "Breakdowns and power surges are a daily occurrence." It is important to note that the project specifically addresses these power supply shortfalls and will contribute to improving the quality and reliability of power distribution in the area.

Specific Issues Raised in the Request

Substation construction compliance with local and national laws

24. ***Management notes that the concerns expressed in the Request have been submitted to a national legal process and are currently under consideration.*** Given the history of the dispute between the Requesters and KPLC and the complexity of the ongoing national legal process, it would not be appropriate for Management to comment on this process or anticipated outcomes.

25. ***Management notes that a number of the Requesters' claims concern alleged violations of Kenyan law, and are currently the subject of a case before the National Environmental Tribunal (NET).*** These include the Requesters' assertions that: (i) the permission granted to KPLC to build the substation was based on an improper change of user decision by the CCN; (ii) the substation is illegally located in a Zone 5 under Nairo-

bi's zoning regulations, which is a zone for "low density residential one-family houses;" and (iii) there are health and safety issues, and a failure to adequately consider alternatives and other issues. The Requesters further argue that construction of the substation has proceeded in violation of a Stop Order issued by the NET.

26. ***Status of the NET process.*** The case being heard by the NET was filed on January 21, 2011 by the Njumbi Road Residents Association and the Lavington Residents Association as an appeal against National Environment Management Authority (NEMA) approval of the substation. NEMA, KPLC and the CCN are named as respondents in the appeal. KPLC was notified of the appeal by a letter signed on behalf of the Chairman of the NET dated March 1, 2011. The letter further stated that all works at the site must stop until the appeal is heard and determined by the NET (referred to by the Requesters as the "Stop Order"). KPLC has informed the Bank that it has responded strongly against all the claims. It has further reported that oral hearings before the NET commenced on May 14, 2012 and are currently ongoing with periodic adjournments.

27. ***Change of user and zoning issues.*** KPLC has provided to the Bank copies of: (i) "Public Notice on the Change of User" and an "Application for Development Permission" published in local newspapers on July 29, 2010; and (ii) "Notification of Approval of Development Permission" by the CCN dated December 9, 2010. The Notification refers to the date when the specific meeting of the Town Planning Committee was held and to the agenda item.

28. ***Management is not in a position to opine on matters concerning compliance with Kenyan law.*** It notes, however, that the documentation provided by KPLC is consistent with what Management understands to be the applicable legal process for obtaining approval for land use changes. In Management's judgment, the appropriate process for determining these issues is through the ongoing NET case.

Stop Order

29. The Bank first learned of the Stop Order through a communication sent by the Requesters in May 2011. The Task Team Leader (TTL) requested clarifications from KPLC and was informed in June 2011 that *"the matter/hearing has not kicked off yet as the tenure of some Commissioners at NET expired and the re-appointment by the Government has just been done."* Thereafter, until March 2012, the TTL understood that the matter was ongoing at the NET and had no written communication on this issue with either the Requesters or KPLC. In response to subsequent requests for more detailed clarification, KPLC has informed the Bank that in its considered legal opinion: (i) the order was invalidly issued because the NET was not properly constituted at the time the order was issued; (ii) the legality of the Stop Order is questionable; and (iii) the most expeditious and appropriate way to resolve any questions concerning the validity of the Stop Order is through the ongoing NET process itself. On May 14, 2012 the NET ruled that the merits of the appeal and the legality of the Stop Order should be considered together.

30. *Management is once again not in a position to opine on this issue of national law.* In retrospect, given the apparent seriousness of the issue, Management considers that it would have been prudent for the Bank to pursue this matter more proactively with KPLC at the time it came to the Bank's attention. At present, in light of the reconvening of the NET and the advanced status of ongoing hearings Management considers it best to allow the NET process to run its course.

The Environmental Impact Assessment for the substation

31. The project is rated as a Category B project for purposes of Bank safeguard policies. Safeguards aspects of the project's Distribution component, including the substations, are governed by an Environmental and Social Management Plan (ESMP) adopted in 2008 in connection with the Additional Financing. The ESMP adopts a framework approach, in which certain responsibilities for screening and assessing the environmental impacts of subprojects are delegated to KPLC.² The capacity of the Borrower was deemed sufficient for it to prepare Category B EAs without the Bank's prior review and approval. The ESMP was disclosed at the Bank's InfoShop on March 12, 2008 and in Kenya on March 29, 2008.

32. The Integrated Safeguards Data Sheet (ISDS) prepared for Additional Financing in 2008 noted that, *"KPLC [and KenGen] have the institutional structures for managing environmental and social issues and a track record for doing so under several Bank-financed projects, including the ongoing Energy Sector Recovery Project. They regularly carry out environmental audits as required by Kenyan law and implement the recommendations, and provide environmental training to their employees; [KenGen is in the process of obtaining its ISO 14001 Certification for Environmental Management]. Thus, [KenGen and] KPLC will be able to deal with any potential adverse environmental and social impacts of the additional financing operation in the context of the updated Environmental and Social Management Plan (ESMP) and the original EA report which will be implemented by their qualified personnel."*

33. The ESMP establishes a screening process for subprojects. KPLC was required to submit copies of EIA reports to the Bank for review and approval only in the case of subprojects categorized as "more complex" (labeled B2)³ as a result of applying the screening criteria. Based on screening results it was determined that the substation projects (including Lavington as one of the Nairobi Area Substations) fell into the "less complex" category (B1), which per the terms of the ESMP required only the application of simple mitigation measures, and not a separate EIA. Nevertheless, as per NEMA requirements, a preliminary EIA (referred to as an EIA Report) was prepared. Based on the second set of consultations, which constitutes part of the EIA Report, NEMA determined that a full

² The ESMP approach is consistent with the provisions of Paragraph 9 of OP 4.01, governing environmental assessment in sector investment lending. (See also para 2.1 in Annex 1).

³ "B1" and "B2" are labels of subcategories under the national Kenyan system.

EIA study was not required. Two more sets of consultations were held in February 2011. NEMA issued a license on February 24, 2011 for the construction to proceed.

34. While the screening checklist contained in the Bank ESMP is quite comprehensive, it appears that a “blanket” approach was used for each category of works (i.e., construction of substations in Nairobi area). A more thorough screening of individual sites may have yielded more specific information earlier about the Lavington site, although the EIA Report subsequently confirmed that the site is not an environmentally important area. The Bank team met with the Water Resources Management Authority (WRMA) in Nairobi on June 8, 2012, which confirmed that there is no gazetted wetland (protected area) in Lavington, or elsewhere in the Nairobi area.

35. According to WRMA Rules (2007), certain activities are proscribed within six meters from a watercourse (riparian land). While the watercourse adjacent to the substation is heavily polluted, according to the Water Resources Management Rules, a “watercourse” is defined as “*any natural channel or depression in which water flows regularly or intermittently, unless declared not to be watercourse under this Act.*” KPLC informed the Bank that the substation does not violate this rule because permanent structures (transformers and the control building) are more than six meters from the watercourse. The Bank team confirms that the transformers and control building are at a distance of ten meters from the watercourse. The pre-existing boundary wall of the substation (the closest point to the watercourse) is more than six meters from the watercourse.

36. The EIA refers to the watercourse as follows: “*An open sewer trench originating from the nearby Kawangware slums runs through the proposed substation compound, but has been diverted so to flow near the edge of the compound.*”⁴ Previously, it used to run right through the middle of the compound.” Site photos in the EIA Appendix show what is purported to be wastewater. Based on this description, the aerial photo and site map on pages 7 and 8, and the Bank team visit to the site in March 2011, the Bank team is of the opinion that the substation site and its surroundings cannot be considered an ecologically fragile habitat, as it is significantly degraded. Nevertheless, per the Water Resource Management Rules 2007, cited above, a watercourse cannot be “declassified” (no matter how heavily polluted) unless declared not to be a watercourse under the Act. The EIA will be revised to correctly describe the watercourse.

Quality of the EIA

37. ***Management considers that the EIA is technically adequate and appropriate for a subproject of the nature and size of the substation.*** The focus of ecological baseline information is on the Metropolitan Area of Nairobi and to a lesser extent on Lavington specifically. However, it should be noted that Lavington is in the center of a heavily populated city, and that the site is not close to environmentally sensitive areas. Management

⁴ EIA, page 14

considers that the review of alternative sites in the EIA was conducted in an appropriate manner.

Quality of EIA consultations

38. ***Management notes that initial consultations were uneven, but that these were subsequently supplemented by more substantial consultations.*** A total of four consultation meetings with people potentially affected by the project were held, namely: (i) during the preparation of the EIA in July/August 2010; (ii) in November / December 2010, when KPLC distributed questionnaires and received responses; (iii) on February 22, 2011 with the Requesters' representative and 28 other participants (including eight members of the KPLC team); and (iv) on February 28, 2011 at the Requesters' representative's residence. The consultations conducted as part of the EA process are detailed in Annex 3.

39. The Bank has reviewed the consultation documentation and notes that as described in these documents the process appears to have been appropriate for a subproject of this size and nature. The first two consultations were completed prior to CCN approval, the third immediately prior to and the fourth immediately after NEMA's issuing of the EIA license, and prior to the start of civil works. The first of the four consultations was by itself inadequate, and judged so by NEMA, which appropriately required the subsequent consultations to take place prior to issuing the license. These consultation minutes indicate that considered responses and adequate mitigation measures were proposed to deal with a number of stakeholder concerns.

40. In response to the concern expressed by stakeholders that trees were cleared in the project area, KPLC explained that the existence of tall trees within a substation pose a safety hazard. KPLC agreed to plant smaller trees within the project area. KPLC responded to a stakeholder's concern that felled trees were touching his electrified fence, posing a safety hazard, by apologizing and proposing to immediately remedy the situation. KPLC also informed stakeholders that it would require the contractor to put up a hoarding before starting construction of the perimeter wall. KPLC agreed to share the EIA and all permits received with the stakeholders. With regard to stakeholder concerns about electromagnetic radiation and other health and safety concerns, KPLC reassured them the incoming 66kV feeders would be run underground insofar as possible (thereby also preserving trees) and that the perimeter wall to be built around the substation would be manned around the clock. To limit noise emissions, KPLC said that all noise emissions would be kept within NEMA set limits (these are stricter than the limits under the World Bank Group Environmental, Health and Safety (WBG EHS) Guidelines – Noise Management) and KPLC promised to gather statistics on noise emissions at other substations for comparative purposes. KPLC contracted a laboratory to measure noise levels at eight substations (report of SGS Kenya Limited dated 16 May, 2011). See also section below *"Noise levels during operation of the substation."*

41. While Bank safeguard policies provide a framework for consultation with potentially affected people to help inform the design of appropriate impact avoidance and mitigation measures, they do not require that *"a majority support the development"* as as-

serted by the Requesters. Management has been unable to find provisions in NEMA's governing regulations requiring an approval by 50 percent of affected residents, as asserted by the Requesters.

Health concerns

42. The Requesters express concerns about potential health impacts from exposure to electromagnetic radiation and cite studies and regulations to support their position. ***Management has carefully reviewed these concerns including the cited studies and concluded that they are not sufficiently robust and that the scientific consensus is that no known health impacts can be linked to the electromagnetic exposure that is expected to stem from the project.***⁵ In Management's view the Requesters' concern is based on *perceived risks* which cannot be supported by any evidence of *real risks*.

43. ***Internationally recognized radiation protection agencies and national health agencies have reviewed the scientific literature and evidence available and have concluded that evidence is insufficient to establish a definitive causal relationship between low frequency magnetic field exposure and increased incidences of cancer and other illnesses.***⁶ The WBG EHS Guidelines (Electric Power Transmission and Distribution) state that: "*Although there is public and scientific concern over the potential health effects associated with exposure to [electric and magnetic field] EMF (not only high voltage power lines and substations, but also from everyday household uses of electricity), there is no empirical data demonstrating adverse health effects from exposure to typical*

⁵ Extensive epidemiological and laboratory research has been conducted over the last 15 years on the biological and health consequences of exposure to Extremely Low Frequency (ELF) EMFs. Some epidemiological studies have found weak associations between exposure to power-frequency EMFs and some forms of cancer, such as leukemia; while other studies have failed to find such associations. The primary limitation with most epidemiological studies has been with the methods of exposure assessment. Rigorous methods of exposure assessment that can be associated with biological effects are clearly needed. Epidemiological studies also continue to suffer from significant methodological difficulties associated with the effects of confounding factors. These difficulties hinder interpretation and acceptance of epidemiological findings. Laboratory studies have noted a wide variety of interesting biological effects resulting from exposure to power-frequency EMFs. The most significant and replicated findings are an apparent change in ion efflux at cell membranes in response to limited ranges and intensities of ELF electric fields, an effect of ELF magnetic fields on melatonin production, and effects on enzyme activity. Several concerns exist with regard to the laboratory findings. One concern is that the field strengths used are often orders of magnitude greater than commonly encountered in the home or office. Another concern is that much of the laboratory evidence remains to be independently confirmed. Lastly, a credible mechanism by which commonly encountered (milligauss) power-frequency EMFs could produce human health effects such as cancer still needs to be developed. Thus, the significance of the laboratory findings to human health is questionable. (Engineering in Medicine and Biology Magazine, IEEE, Jul/Aug 1995, Author(s): Bren, S.P.A., Volume: 14, Issue: 4, Page(s): 370-374).

⁶ Internationally recognized radiation protection agencies and national health authorities such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP), the World Health Organization (WHO), the British Health Protection Agency, Health Canada or the German Commission on Radiological Protection concluded that there is no proof of a connection between everyday life exposure to magnetic fields and an increased incidence of cancer in adults.

EMF levels from power transmissions lines and equipment.” The Guidelines further state that “However, while the evidence of adverse health risks is weak, it is still sufficient to warrant limited concern.” And they also recommend as possible measures “Considering siting new facilities so as to avoid or minimize exposure to the public.”

44. The Requesters refer to a study by Wertheimer and Leeper from 1979, which examined incidents in Colorado between 1976 and 1977.⁷ The WHO states in this context: *Many studies published during the last decade on occupational exposure to ELF fields have exhibited a number of inconsistencies. They suggest there may be a small elevation in the risk of leukemia among electrical workers. However, confounding factors, such as possible exposures to chemicals in the work environment, have not been adequately taken into account in many of them. Assessment of ELF field exposure has not correlated well with the cancer risk among exposed subjects. Therefore, a cause-and-effect link between ELF field exposure and cancer has not been confirmed.*⁸ Moreover, it is important to understand that the “possibly carcinogenic” classification that the Requesters refer to is also applied to charred meat from broiling, coffee and gasoline engine exhaust, among others, and is often used for agents that require further study.

45. Management refers to the recommendation of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) which recommends for magnetic field exposure a general public limit of 100 μ T (microtesla). The electromagnetic field strength close to transformers usually drops to 1–5 μ T within 1–2 meters from the transformer and measurements with comparable substations have shown that the electromagnetic exposure becomes indistinguishable from the background due to other sources within five meters.⁹ Most OECD countries, including the European Union (EU), recommend a public exposure limit of 100 μ T.¹⁰

Minimum distance requirements from residences for substation transformers

46. The Requesters also submit that it would be “normal practice” to place transformers “at a distance of one or two hundred meters from human habitation.” From a technical efficiency standpoint the substation’s ideal location needs to be close to the demand center and moving it away from the demand center would result in losses. This would be the case as KLPC was not able to identify an alternative but suitable location close to the demand center. The Bidding Document (Part 2.1) for the Lavington substation stipulates

⁷ American Journal of Epidemiology. 1979 Mar; 109(3):273-84.; Electrical wiring configurations and childhood cancer, Wertheimer N., Leeper E.

⁸ World Health Organization, Electromagnetic fields and public health: extremely low frequency (ELF), Fact sheet N°205, November 1998.

⁹ German Federal Office for Radiation Protection, “Elektrische und magnetische Felder der Stromversorgung” (2005); National Grid (UK) surveyed 25 final distribution substations and found that “Mean magnetic fields close to the perimeter fence were about 1.5 μ T, falling to half this in an average distance of 1.3 m and becoming indistinguishable from the background due to other sources within 5 m.”

¹⁰ EU Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (1999/519/EC).

that the general technical specifications of the substation shall comply with the provisions and requirements of the standards of the International Electro-technical Commission (IEC). The IEC 61936-1 standard (section 8.7.2.1) stipulates that for the type of outdoor transformers in the Lavington substation¹¹ the guide value for clearances between the transformers and a combustible building surface is ten meters. The transformers are more than five meters from the perimeter wall of the substation that also borders the nearest Njumbi Road residence and are at least 13 meters from the residence itself. Management will recommend to KPLC that it construct a fire resistant wall along the perimeter of the substation bordering Njumbi Road residences, to allow possible future extensions to the existing residence building or a new building which could be constructed closer than ten meters from the substation transformers. Such a fire and blast resistant wall is recommended in the IEC standard 61936-1 when it is not possible to site transformers more than ten meters from combustible building surfaces.

47. ***Minimum distance requirements to distribution (66 and 11 kV) lines are usually based on security considerations in order to avoid physical contact with the circuit lines.*** Management has found that in a number of OECD countries the minimum safety clearance between residences and high-voltage transmission lines with voltage that far exceeds the one used in the Lavington substation is as low as 6 to 7 meters.¹²

Noise levels during operation of the substation

48. The main source of noise at the substation will be from two 18/23 MVA transformers. The technical specification of the substation (section 4.1.3.2.1.4 of the Bidding Document) requires that the noise level of the transformer shall not exceed 78 dB(A) when tested in accordance with IEC standards (IEC 60076) and these values would be verified during both the equipment factory acceptance and commissioning acceptance tests. The specifications require that the transformer and its auxiliary equipment operate without undue noise and that every care shall be taken in the design and manufacture to reduce noise to the level of that obtained in good modern practice.

49. However, Management notes that WBG EHS Guidelines for Noise Management (1.7) stipulate that noise impacts should not exceed 55 dB(A) during daytime and 45 dB(A) during nighttime (One Hour LAeq – residential). NEMA regulations (Legal Notice No. 61 of 2009: Noise and excessive vibration control regulations, 2009) require that sound levels not exceed 50 dB(A) and 35 dB(A) during daytime and nighttime respectively in residential areas.

50. Therefore Management will recommend that sound levels meet NEMA regulations. This may require that KPLC erect noise abatement barriers in addition to the fire

¹¹ Two oil insulated 18/23 MVA, ground mounted transformers with a liquid volume of less than 20,000 liters.

¹² European Norm 50341 (Overhead electrical lines exceeding AC 45 kV); ENA Technical Specification 43-8 “Overhead Line Clearances”.

and blast resistant wall that Management will also recommend. Management will recommend that KPLC engage a competent laboratory/consultant to measure noise levels at selected substations, including the Lavington substation (the last such report “Environmental Noise Assessment Report,” prepared by SGS Kenya Ltd for eight substations was completed on May 16, 2011) and to make these publicly available. Management will request KPLC to take remedial measures in case noise levels exceed permitted levels. Management has reviewed the SGS report and has noted its conclusions that “the background noise levels during diurnal schedule at the sensitive receptors were within the Legal notice no. 61 of 2009 and [WBG EHS] Guidelines values. However, during nocturnal schedule, the levels exceeded the limits stipulated in the Legal notice no. 61 of 2009”.

Concerns regarding accidents

51. ***In Management’s view the risks related to construction and operation of a substation are considered to be moderate and manageable.*** Environmental health and safety hazards, such as possible fire, explosion, and noise pollution during the operation of the substation have been addressed under the EIA and are considered manageable risks in this type of infrastructure facility. Examples of measures included in the EIA are: Fire safety measures (installation of fire detection equipment and fire extinguishers, training on firefighting, an emergency response manual, enforced use of Personal Protective Equipment); Construction of a perimeter wall that will be guarded around the clock; Scheduled maintenance to reduce humming, and monitoring of noise emissions to ensure they are within NEMA standards; Use of an integrated waste management system; Collection of storm water runoff and erosion control; and Regular maintenance of sewage pipes connected to the city sewage system. The implementation of the EMP will be closely monitored by the Bank team.

52. The Routine Safety and Environment Inspections of the Lavington 66/11 kV Substation, conducted by KPLC on August 29, 2011 and January 27, 2012 are in compliance with the EMP for the construction phase. A field based inspection by the Bank team in March 2012 did not indicate any breaches of compliance with environmental mitigation measures required during the construction phase of a substation. The August 2011 and January 2012 Inspection Reports did note the need for more regular water sprinkling to suppress dust pollution, the need to enforce the use of personal protective equipment, and the need to improve road traffic signage regarding the use of heavy trucks, and to ensure that contractors run incoming feeders along the road reserve. The Inspection Reports, and visits by the Bank team in March and June 2012 showed no evidence of improper dumping of construction or other waste, nor was there any evidence of oil spills.

Concerns regarding KPLC track record for safety

53. KPLC has informed Management that since 2008 there has been one fire incident at each of the following four substations – DCK Naivasha, Lanet, Steel Billets and Airport. In at least three of these incidents, theft of earthing material (copper rods) was the cause of fire. KPLC further informed the Bank that none of these fires resulted in total

damage of the substations and that no damage was caused to any equipment/property outside the confines of the substation. KPLC also stated that no claims have been received from third parties in respect of these incidents.

54. In recent years, there has been increased incidence of theft of KPLC equipment (conductor, earthing equipment such as copper rods and oil contained in pole-mounted transformers), which can cause transformer fires as well as disrupt supply. KPLC has taken a number of counter theft measures to prevent such incidents. Additional practical and legal efforts to deter vandalism are underway.

55. The Bank will examine jointly with KPLC through ongoing technical assistance activities how safety aspects in distribution network construction and operations can be further improved. This will include how security of such installations can be further improved.

Alleged impact on value of neighboring properties

56. Management is unable to confirm the loss in real estate value referred to by the Requesters and notes that based on international experience, it is often difficult to isolate or quantify the effect – negative or positive – of electricity connectivity infrastructure on adjoining properties.

57. The impact of development on the values of adjoining properties is not an issue dealt with specifically in the Bank's safeguard policies. The consultations conducted as part of the environmental assessment process provide an opportunity for those affected by development to raise concerns about any impacts they consider important, including as the case may be, concerns about property values and possible ways of mitigating such effects. As a result of consultations, KPLC has proposed some additional mitigation measures to address aesthetic, safety and other concerns, such as the planting of trees, placing feeders underground, and to limit felling of trees to the extent possible.

58. Management will propose to KPLC to further explore, in consultation with stakeholders including Njumbi Road residents, measures to address the projects visual impact e.g., through enhanced landscaping (such as planting of ornamental plants on the road frontage, raising the height of perimeter walls, etc.). Management will also recommend that arrangements be made for independent third party monitoring of noise levels during construction and operation and that the measurements be made publicly available. Management will also ensure that independent third party monitoring of the radiation is carried out and the results made publicly available.

Bank responsiveness to Requesters

59. Following the Bank team's receipt of the Requesters' complaints in April 2011 the Bank promptly followed up with KPLC and obtained responses and documentation on the process of land acquisition and change of use. When the Bank team received fur-

ther complaints from the Requesters in March 2012 it visited the site and met with KPLC. the Bank team met with the Requesters' representative and two other residents on June 12, 2012 on site of the substation to further discuss their concerns raised in the Request for Inspection, and also visited adjoining residences.

60. Management acknowledges that the Bank team has focused primarily on following up on the Requesters' complaints with KPLC internally, rather than maintaining direct contact with the Requesters.

Conclusion

61. ***Management believes that the Bank has made every effort to apply its policies and procedures and to pursue concretely its mission statement in the context of the project.*** In Management's view, the Bank has followed the guidelines, policies and procedures applicable to the matters raised by the Request. As a result, Management believes that the Requesters' rights or interests have not been, nor will they be, directly and adversely affected due to a failure of the Bank to implement its policies and procedures.

62. ***However, in order to improve project implementation and to ensure that the mitigation measures spelled out in the EMP are effective, Management suggests a set of measures as set out below. These measures are unrelated to compliance and have been discussed in part with the Requesters during Management's meeting with them on June 12, 2012.*** Management notes that these measures are consistent with the requirements of the EMP and would address selected concerns expressed by the Requesters.

- Management will recommend to KPLC to build a fire and blast resistant wall along the perimeter of the substation bordering Njumbi Road residences, to a height reasonably agreed with the owners of existing residences on contiguous properties.
- Management will closely monitor the implementation of the EMP. Management will work with KPLC to further improve safety aspects in distribution network construction and operations.
- Management will also examine in consultation with KPLC how the security of its installations can be further improved with a view to recommending specific enhanced security measures and implementing them.
- Management will ensure that mitigation measures are implemented as per the EIA/EMP during the remainder of the construction phase and subsequent operation.
- Management will recommend that noise levels meet NEMA requirements (Legal Notice No. 61, 2009). This may require that KPLC erect noise abatement barriers in the substation. Management will also recommend that KPLC engage a competent laboratory/consultant to measure noise levels at selected substations including the Lavington substation and to make these publicly available. Management will

request KPLC to take remedial measures in case noise levels exceed permitted NEMA levels.

- Management will recommend to KPLC that arrangements be made for independent third party monitoring of EMR during operation and that the measurements be made publicly available.
- Management will propose to KPLC that a Stakeholder Committee be established to monitor the mitigation measures described in the EMP. Such Stakeholder Committee could meet with KPLC at regular intervals to discuss concerns related to the construction, operation, and maintenance of the substation, including possible remedial actions as appropriate.
- Management will propose to KPLC that enhanced landscaping (e.g., planting of trees and ornamental plants outside the perimeter wall, raising the height of the perimeter wall and other measures to make the substation less obtrusive) be undertaken in consultation with stakeholders including Njumbi Road residents.
- During supervision, Management will monitor adherence to the clearances specified for the line conductors.

Annex 1: Claims and Responses

No.	Claim	Response
1.	<p>The project site is located in an area reserved under Nairobi City by-laws, for residential property only. The development is classified as a light-industrial complex forbidden under existing legislation. The construction has significantly changed the environmental ambience of the area and has already comprehensively and negatively affected the value of properties within the vicinity of the project.</p> <p>[...] I trust that it is clear that the Association and its members that I represent, understand the need for, and welcome appropriate development. It is appreciated that KPLC services in the city and especially in Lavington, are inadequate and must be upgraded. NRRA rejects the decision to site the power substation adjacent to Njumbi Road. The objection stems from the knowledge that to approve an industrial development within a Zone 5 residential area is, under current law, illegal.</p> <p>Other concerns include the risk of fire, explosion, unacceptable noise levels and pollution associated with the construction and operation of a power station within a residential community, acknowledged as possible within the KPLC Environmental Impact Assessment. Njumbi Road has experienced explosion and fire on a previous occasion when a KPLC transformer exploded. Severe damage to property and injury to residents occurred on that occasion. KPLC does not enjoy a reputation for efficiency and safety and residents are in fear of their lives. A few weeks ago, a similar power station in another part of the city suffered an explosion.</p>	<p>1.1 Compliance with zoning regulations</p> <p>KPLC has submitted to the Bank documentary evidence of the process followed in acquiring the site for the substation and in obtaining Approval of Development Permission for a Change of Use from Residential to Electrical Substation, which was granted by the CCN on December 7, 2010. The process is detailed in Annex 2. These documents are consistent with what Management understands to be the applicable legal process for obtaining approval for land use changes. Management notes that the change of use approval is currently under review by the NET, as part of an appeal lodged by the Requesters and another residents association.</p> <p>1.2 Visual impacts and value of properties in the vicinity of the substation</p> <p>In a densely populated urban setting the adverse impacts of building and operating essential urban infrastructure, such as a power substation which will serve the entire community, have to be jointly borne by residents and may affect some residents more than others.</p> <p>This is especially the case for infrastructure components that are related to the distribution of local services and which cannot be moved outside the city or away from residences. This may at times be competing with residents' preferences.</p> <p>Management is unable to confirm the loss in real estate value referred to by the Requesters and notes that based on international experience, it is difficult to isolate or quantify the effect – negative or positive – of electricity connectivity infrastructure on adjoining properties. The impact of development on the values of adjoining properties is not an issue dealt with specifically in the Bank's safeguard policies. The consultations conducted as part of the environmental assessment process provide an opportunity for those affected by development to raise concerns about any impacts they consider important, including as the case may be, concerns about property values and possible ways of mitigating such effects.</p> <p>As a result of consultations with stakeholders, KPLC has proposed some additional mitigation measures to address aesthetic, safety and other con-</p>

No.	Claim	Response
		<p>cerns, such as the planting of trees, placing feeders underground, and limiting tree felling to the extent possible.</p> <p><u>Measures proposed by Bank Management</u></p> <p>Management will propose to KPLC to further explore, in consultation with stakeholders including Njumbi Road residents, measures to address the project's visual impact, e.g., through enhanced landscaping (such as planting of ornamental plants on the road frontage, raising the height of perimeter walls, etc.).</p> <p>1.3 Potential transformer fires and explosions</p> <p>Management has reviewed the technical specifications for the substation and determined they meet industry norms. The equipment specifications for the substation are based on industry accepted protection measures to minimize the possibility of explosions, including: (i) transformer temperature monitoring and automatic disconnection in case of an internal fault; (ii) rugged transformer tank to withstand high internal pressures (up to 70Pa) with overpressure protection for pressure relief in case of explosion or sudden overpressure within the transformer tank to avoid oil spillage. In addition, the substation design includes an oil collection pit and oil trap to minimize oil spillages.</p> <p>Management notes the different nature of transformers on residential streets and transformers located inside substations. The former, whose sizes range from 15 to 315 kVA (kilovolt amperes), are pole mounted and may be located in close proximity to or inside residential compounds. Large transformers (such as the two in the Lavington substation) are subject to separate standards governed in the case of those in the Lavington substation by IEC 61936 (see Item 11.2 below).</p> <p><u>Measures proposed by Bank Management</u></p> <p>See Item 11.2 below for further discussion of the IEC 61936 standard in respect of required distances from buildings in siting substation transformers.</p> <p>1.4 Pollution associated with the construction of the substation</p> <p>The EIA for the Lavington substation identified potential negative impacts and recommended mitigation measures during construction and operation. KPLC has provided the Bank with an inspection report carried out during construction that confirms it has conformed to the mitigation measures in the</p>

No.	Claim	Response
		<p>EIA report during construction.</p> <p>KPLC monitored compliance with the provisions of the EIA during construction. Inspectors from KPLC's Safety, Health and Environment Dept. inspected the site during construction (in August 29, 2011 and on 27 January 2012) which checked for compliance with mitigation measures in the EIA. In some respect it found deficiencies and made recommendations to the contractor on improvements that were necessary.</p> <p>1.5 Damage to property and injury to residents in Njumbi Road</p> <p>KPLC informed the Bank that on February 19, 1997, a community member wrote to KPLC complaining of a transformer at Njumbi Road which had burst into flames. He stated that the fire spread to the perimeter fence of his tenant, and completely destroyed her car. The incident was confirmed by KPLC and the matter referred to KPLC's insurers to handle the claim, which was settled.</p> <p>1.6 Track record of KPLC for safety</p> <p>KPLC has informed the Bank that since 2008 there has been one fire incident at each of the following four substations – DCK Naivasha, Lanet, Steel Billets and Airport. The DCK fire occurred on January 9, 2011, the Lanet fire occurred on November 19, 2011, the Steel Billets fire on November 21, 2011, and the Airport fire on March 22, 2012. KPLC informed the Bank that none of these fires resulted in total damage of the substations and that no damage was caused to any equipment/property outside the confines of the substation. KPLC also stated that no claims for injury have been received from third parties in respect of these incidents.</p> <p>In recent years, there has been an increased incidence of theft of KPLC equipment (conductor, earthing equipment and oil contained in pole-mounted transformers), which can cause transformer fires as well as disrupt supply. KPLC has taken a number of counter theft measures including use of vacuum insulated pole mounted transformers, and siting of pole mounted transformers inside police and school compounds when possible.</p> <p><u>Measures proposed by Bank Management</u></p> <p>Management will closely monitor the implementation of the EMP. Management will work with KPLC to further improve safety aspects in distribu-</p>

No.	Claim	Response
		<p>tion network construction and operations.</p> <p>Management will also examine in consultation with KPLC how the security of its installations can be further improved with a view to recommending specific enhanced security measures and implementing them.</p>
2.	<p>The World Bank has not followed due diligence in approving the project. It should have inspected the site, recognized the unlawful nature of the development and that World Bank rules were being flouted. It is a matter of much regret that complaints made by my Association and earlier by a resident, Mr. David Bell have been ignored by the World Bank Country Office. Bank Officials should have carried out an investigation as soon as they became aware of the problem and interacted with the affected community. Instead the Country Office has behaved like a co-conspirator in this illegal and dangerous enterprise. In particular, we consider that World Bank Environment and Social Safeguards Policy BP4.01 and OP 4.01 which require environmental assessment of projects proposed for World Bank financing to help ensure that they are environmentally sound and sustainable. It is my association's view that the project is unsound, illegal and dangerous and that the World Bank was aware of this when it approved the project.</p>	<p>2.1 World Bank due diligence in approving the substation.</p> <p>2.1.1 The project is rated as a Category B project for purposes of Bank safeguard policies. Safeguards aspects of the project's Distribution component are governed by an ESMP adopted in 2008 in connection with the Additional Financing. The ESMP was disclosed at the Bank's InfoShop on March 12, 2008 and in Kenya on March 29, 2008. The ESMP adopts a framework approach, in which certain responsibilities for screening and assessing the environmental impacts of subprojects are delegated to KPLC. The capacity of the Borrower was deemed sufficient for it to prepare certain types of Category B EAs without the Bank's prior review and approval, as described below.</p> <p>The ESMP approach is consistent with the provisions of Paragraph 9 of OP 4.01, governing environmental assessment in sector investment lending.</p> <p>The ISDS prepared for Additional Financing in 2008 noted that <i>"KPLC [and KenGen] have the institutional structures for managing environmental and social issues and a track record for doing so under several Bank-financed projects, including the ongoing Energy Sector Recovery Project. They regularly carry out environmental audits as required by Kenyan law and implement the recommendations, and provide environmental training to their employees; KenGen is in the process of obtaining its ISO 14001 Certification for Environmental Management. Thus, [KenGen and] KPLC will be able to deal with any potential adverse environmental and social impacts of the additional financing operation in the context of the updated Environmental and Social Management Plan (EMP) and the original EA report which will be implemented by their qualified personnel."</i></p> <p>The ESMP establishes a screening process for subprojects. KPLC was required to submit copies of EIA reports to the Bank for review and approval only in the case of subprojects categorized as "more complex" (labeled B2) as a result of applying the screening criteria. Based on screening results it was determined that the substation projects (including</p>

No.	Claim	Response
		<p>Lavington as one of the Nairobi Area Substations) fell into the “less complex” category (B1), which per the terms of the ESMP required only the application of simple mitigation measures, and not a separate EIA. Nevertheless, as per NEMA requirements, a preliminary EIA (referred to as an EIA Report) was prepared. Based on the second set of consultations which constitutes part of the EIA Report, NEMA determined that a full EIA study was not required. Two more sets of consultations were held in February 2011. NEMA issued a license on February 24, 2011 for construction to proceed.</p> <p>The screening checklist contained in the project’s ESMP is quite comprehensive. However, it appears that a “blanket” screening approach was used for each category of works (i.e., construction of substations in Nairobi area). A more thorough individual screening, would, in hindsight, have yielded more specific information about the Lavington site, although the EIA Report subsequently confirmed that the site is not an environmentally important area. The risks related to construction and operation of a substation are considered to be moderate and manageable. Environmental health and safety hazards have been addressed in the EIA and in equipment specifications, and are considered manageable risks in this type of infrastructure facility.</p> <p>2.1.2 Capacity of KPLC to implement environmental and social safeguards</p> <p>See above statement in ISDS.</p> <p>2.1.3 Supervision of compliance with safeguards</p> <p>The Routine Safety and Environment Inspection of the Lavington 66/11 kV Substation, conducted on August 29, 2011, and January 27, 2012 is in compliance with the EMP for the Construction Phase. A cursory inspection by the Bank team in March 2012 did not indicate any breaches of compliance with environmental mitigation measures required during the construction phase of a substation. Both Inspection Reports noted the need for more regular water sprinkling to suppress dust pollution, the need to enforce the use of personal protective equipment, and the need to improve road traffic signage regarding the use of heavy trucks. The January Inspection report cautioned the contractor to ensure feeders were run along the road reserve. Photos included in the Inspection Report, and visits by the Bank team in March and June 2012 showed no evidence of improper dumping of construction or other waste,</p>

No.	Claim	Response
		<p>nor was there any evidence of oil spills.</p> <p>Once the substation site was identified, KPLC prepared an EIA Project Report in August 2010, and proceeded with implementation as per the EIA and EMP.</p> <p>Between August 2010 and March 2012, based on the assessment done at Bank project appraisal that KPLC capacity to implement environmental safeguards was adequate, the Bank did not request KPLC to provide EIAs.</p> <p>In March 2012, following receipt of further correspondence from the Requesters, the Bank team requested the EIA from KPLC, including documents detailing consultations. KPLC disclosed the EIA on June 7, 2012. The Bank considers the simplified EIA (with the incorporation of subsequent documents detailing consultations) to be of an acceptable quality.</p> <p>The process followed in preparation (including consultations), review and disclosure of the EIA is detailed in Annex 3.</p> <p><u>Measures proposed by Bank Management</u></p> <p>Management will ensure that mitigation measures are implemented as per the EIA/EMP during the remainder of the construction phase and subsequent operation.</p> <p>2.2 Bank responsiveness to complaints made by Requesters</p> <p>When the Bank team received the Requesters' complaints in April 2011 it promptly followed up and obtained documentation from KPLC on the process of land acquisition and change of use. When the Bank team received further complaints from the Requesters in March 2012 it visited the site and met with KPLC. The Bank team acknowledged the Requesters' complaints but did not meet with Mr. Usher until June 12, 2012. Annex 4 provides details of the correspondence of the Bank team with KPLC and with the Requesters.</p> <p>The Bank team did obtain documentation from KPLC in June 2011 that appeared to confirm that KPLC had obtained licenses for change of land use and environmental authorization from NEMA according to normal processes.</p> <p>Management acknowledges that the Bank team in the past had focused primarily on following up on the Requesters' complaints with KPLC internally,</p>

No.	Claim	Response
		<p>rather than maintaining direct contact with the Requesters. Nevertheless, Management acknowledges that the Bank team could have been more proactive in following up on the Requesters' complaints between June 2011 and March 2012, and engaging more directly with the Requesters about their concerns rather than relying solely on KPLC to do so.</p> <p>The Bank team met with the Requesters on June 12, 2012 to discuss their concerns expressed in the Request for Inspection was filed. The Bank team will have further meetings with the Requesters if they make such a request.</p> <p><u>Measures proposed by Bank Management</u></p> <p>Bank Management will propose to KPLC that a Stakeholder Committee be established to monitor the mitigation measures described elsewhere in Management's Response. Such a Stakeholder Committee could meet with KPLC at regular intervals to discuss concerns related to the construction, operation, and maintenance of the substation, including possible remedial actions as appropriate.</p>
3.	<p>The World Bank regulations require full consultation with stakeholders and landowners and require that a majority support the development. In fact, there is total opposition from residents and one hundred and fifty persons, representing 100% of affected people, have signed a petition opposing the project. NEMA has based its approval primarily upon an Environmental Impact Assessment (EIA) prepared by an expert of KPLC's choosing and at its expense. It is naive to assume that the assessment is independent. How could it be? [...] NEMA has endorsed an EIA, prepared by KPLC which is demonstrably incompetent. [...] It is not the scientific inadequacies of the EIA that most concern my Association. It is the fraudulent assertions contained in the document that most offends. I refer to the statements alleging that extensive consultation was undertaken with residents by the EIA consultant. The EIA annexes statements by two witnesses, allegedly supporting the KPLC development. The first denies this and is actually, vehemently opposed. He has since signed a petition against the proposed development. The other is not even a resident of Lavington and has no knowledge of the plans. On the other hand, one hundred and fifty local residents have signed a petition opposing the development. This is believed to represent one hundred percent of all affected and contactable residents. To repeat, there is total opposition to KPLC and residents are angry at the attempted misrepresentation of their opinion and by the deception of NEMA whose charter states that if more than fifty per cent of af-</p>	<p>3.1 Quality of EIA consultations</p> <p>Management notes that initial consultations were uneven, but that these were subsequently supplemented by more substantial consultations. A total of four consultation meetings with people potentially affected by the project were held, namely: (i) during the preparation of the EIA in July/August 2010; (ii) in November / December 2010, when KPLC distributed questionnaires and received responses; (iii) on February 22, 2011 with the Requesters' representative and 28 other participants (including eight members of the KPLC team); and (iv) on February 28, 2011 at the Requesters' representative's residence. The consultations conducted as part of the EA process are detailed in Annex 3.</p> <p>The Bank has reviewed the consultation documentation and notes that as described in these documents the process appears to have been appropriate for a subproject of this size and nature. The first two consultations were completed prior to CCN approval, the third immediately prior to and the fourth immediately after NEMA's issuing of the EIA license, and prior to the start of civil works. The first of the four consultations was by itself inadequate, and judged so by NEMA, which appropriately required the subsequent consultations to take place prior to issuing the license. These consul-</p>

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	<p>affected residents oppose a development then it must be automatically rejected.</p> <p>A photograph shows residents at the site. There was not a single supporter of the project among them. As you have been informed, a wider and honest canvassing of the estate confirmed the total opposition to the proposal. NEMA and the World Bank, in accordance with their charters should have stopped the project at this point. They did not.</p>	<p>tation minutes indicate that considered responses and adequate mitigation measures were proposed to deal with a number of stakeholder concerns.</p> <p>In response to the concern expressed by stakeholders that trees were cleared in the project area, KPLC explained that the existence of tall trees within a substation pose a safety hazard. KPLC agreed to plant smaller trees within the project area. KPLC responded to a stakeholder's concern that felled trees were touching his electrified fence, posing a safety hazard, by apologizing and proposing to immediately remedy the situation. KPLC also informed stakeholders that it would require the contractor to put up a hoarding before starting construction of the perimeter wall. KPLC agreed to share the EIA and all permits received with the stakeholders. With regard to stakeholder concerns about electromagnetic radiation and other health and safety concerns, KPLC reassured them the incoming 66kV feeders would be run underground insofar as possible (thereby also preserving trees) and that the perimeter wall to be built around the substation would be manned around the clock. To limit noise emissions, KPLC said that all noise emissions would be kept within NEMA set limits (these are stricter than the limits under the World Bank Group Environmental, Health and Safety (WBG EHS) Guidelines – Noise Management) and KPLC promised to gather statistics on noise emissions at other substations for comparative purposes. KPLC contracted a laboratory to measure noise levels at eight substations (report of SGS Kenya Limited dated 16 May, 2011). See also section 12.3 below “Noise levels during operation of the substation.”</p> <p>While Bank safeguard policies provide a framework for consultation with potentially affected people to help inform the design of appropriate impact avoidance and mitigation measures, they do not require that “a majority support the development” as asserted by the Requesters. Management has been unable to find provisions in NEMA’s governing regulations requiring 50 percent approval of affected residents.</p> <p><u>Measures proposed by Bank Management</u></p> <p>See Item 2.2 above.</p>
4.	<p>We have complained to the World Bank staff on the following occasions:</p> <p>Letters of 30 May and 10 April 2011 from David Bell,</p>	<p>4.1 Bank responsiveness to Complaints made by Requesters.</p> <p>See Bank Management response in Item 2 above.</p>

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	<p>Njumbi Road Resident to Mr Zutt, Country Director.</p> <p>Email from David Bell, 01 June 2011 to Kyran O’Sullivan, Energy Specialist, World Bank Country Office, Kenya.</p> <p>Letter from Peter Usher (then Chair of NRRA) of 19 March 2012 to Kyran O’Sullivan. Letter hand delivered to WB Office Nairobi.</p> <p>We have received a response to the letter of 19 March dated 3 April 2012 indicating that the WB will revert to the NRRA after consultation with KPLC. There has been no contact since and we are dismayed by the lack of action and failure by the WB to provide a satisfactory response or to contact and liaise with the NRRA or other residents and stakeholders.</p> <p>Mr David Bell received a response to his email attachment. We consider it unsatisfactory and does not solve our problems for the following reasons: The World Bank was made aware of residents’ environmental, safety and health concerns; the fact that the project flouted National and Municipal by-laws and that a court order stopping construction was being ignored. The WB chose to ignore these concerns and although aware of the issues for more than a year, have made no attempt to discuss problems with the complainants including NRRA, a legally registered association, or address the irregularities and unlawful activities carried out by KPLC as part of the WB funded project. The WB has been an accessory to lawbreaking and by endorsing KPLC activities and by ignoring its responsibilities to safeguard human rights, it has put a community in jeopardy, placed people in danger and has destroyed their natural and human environment guaranteed within the Kenya Constitution.</p>	
5.	<p>The Planning Department of the CCN is principally responsible for ensuring that planning approval is granted to only those activities that adhere to the relevant laws and bye-laws of the city. The CCN is a body that cannot provide the most basic of services to its ratepayers. [...] This assumption that regulations which do not exist rather than the existing law, is the basis upon which development strategy is formulated is abhorrent to residents. This is the Association's position. The law is clear and must be applied as it currently exists and not violated for the convenience of the purported Authority.</p> <p>In this context, a decision by KPLC to place an electric power substation in a residential estate, particularly one classified under existing law as Zone 5 is, under all circumstances, illegal and thus, cannot be allowed. Endorsement by NEMA of this proposal is both a betrayal of the environment and of its own legally-binding charter.</p>	<p>5. 1 Legality of permission granted by the City Planning Dept. of the CCN (endorsed by NEMA) to site the substation on Zone 5 (residential) land.</p> <p>See the response to Item 1.1 above.</p>

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6.	<p>It is noted that the project is funded by the World Bank under its project Additional Financing Credit for the Energy Sector Recovery Project. In approving such projects, the World Bank has a designated responsibility to ensure that the project is environmental sound and that people are not subjected to harm. In this the World Bank Kenya Country Office has been derelict in its responsibilities. It has accepted assertions by KPLC that the developer has complied with World Bank requirements for stakeholder consultation when this has been improperly carried out and dishonestly reported. It is regretted that when the Country Office became aware of the violation through complaints by NRRA and others, it chose not to discuss the objections with complainants and to ignore them. By doing so, the World Bank has become a willing accessory to an illegal enterprise. Irrespective of the legal obligations, the World Bank has endorsed a project that has detrimentally altered the physical environment and lessened the quality of life of nearby residents who have made significant and expensive investment in an area, now devalued by an unsound project. [...] The World Bank, through indifference and carelessness has acted contrary to its stated legal principles and is responsible for those risks and losses suffered by land owners and residents.</p>	<p>6.1 EIA stakeholder consultations and reporting of consultations held</p> <p>See Item 3 above.</p> <p>6.2 Bank responsiveness to complaints made by Requesters</p> <p>See Item 2.2 above.</p> <p>6.3 Quality of life and value of property</p> <p>See Item 1.2 above.</p>
7.	<p>An even more serious matter concerns the Njumbi and Chalbi residents. When the NRRA raised objections to the proposed development, the National Environment Tribunal saw fit to impose a STOP ORDER on KP&LC until the matter was heard. I can assert that the building continued unabated from that date until May 2012. This flagrant disobedience of the court order for almost a year, must amount to contempt.</p>	<p>7.1 Stop Order issued by the National Environmental Tribunal (NET)</p> <p>KPLC is a respondent in a case filed on January 21, 2011 by the Requesters and the Lavington Residents Association as an appeal against the NEMA approval of the Lavington substation. KPLC was notified of the appeal by a letter signed on behalf of the Chairman of the NET dated March 1, 2011. The letter further stated that all works at the site must stop until the appeal is heard and determined by the NET (referred to by the Requesters as the "Stop Order"). KPLC has informed the Bank that it has responded strongly against all the claims in the appeal. It has further reported that oral hearings before the NET commenced on May 14, 2012 and are currently ongoing with periodic adjournments.</p> <p>The Bank first learned of the Stop Order through a communication sent by the Requesters in May 2011. The TTL requested clarifications from KPLC and was informed in June 2011 that <i>"the matter/hearing has not kicked off yet as the tenure of some Commissioners at NET expired and the re-appointment by the Government has just been done."</i> Thereafter, until March 2012, the TTL understood that the matter was ongoing at the NET and had no written communication on this issue with either the Requesters or KPLC. In response to</p>

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		<p>subsequent requests for more detailed clarification, KPLC has informed the Bank that in its considered legal opinion: (i) the order was invalidly issued because the NET was not properly constituted at the time the order was issued; (ii) the legality of the Stop Order is consequently questionable; and (iii) the most expeditious and appropriate way to resolve any questions concerning the validity of the Stop Order is through the ongoing NET process itself. On May 14, 2012 the NET ruled that the merits of the appeal and the legality of the Stop Order should be considered together.</p> <p>Management is not in a position to opine on this issue of national law. In retrospect, however, given the apparent seriousness of the issue, Management considers that it would have been prudent for the Bank to pursue this matter more proactively with KPLC at the time it came to the Bank's attention. At present, in light of the reconvening of the NET and the advanced status of ongoing hearings Management considers it best to allow the NET process to run its course.</p>
8.	<p>I draw your attention to the afore-mentioned NEMA CHARTER which categorically states that development should not disturb or alter the existing ambience of the surrounding environment. A picture, extracted from Google Maps, shows the project site and the immediate surroundings. It is clear that the area is a wholly residential area within which no commercial or industrial entity intrudes. That the environmental ambience is being altered and disturbed is blindingly obvious and NEMA has no option under its charter other than to reject the application for this industrial site. A similar responsibility falls upon the World Bank. It too, has responsibility within its Rules to protect people and their environment. In this case, it has not honoured its commitment.</p> <p>Residents have the guaranteed right under the Constitution to a safe and pleasant environment. They have invested heavily in their community and homes. They have circumvented the neglect visited on the community by the CCN by themselves providing and financing services not undertaken by the Council, including building and maintaining the road bed at a cost of over KShs 13 million, undertaking street cleaning and road reserve maintenance and providing security measures and garbage disposal. Property values sup-</p>	<p>9.1 Alteration of the environmental ambience of the neighborhood and property values</p> <p>As noted in Item 1.2 above, in a densely populated urban setting the adverse impacts of building and operating essential urban infrastructure, such as a power substation which will serve the entire community, have to be jointly borne by residents.</p> <p>This is especially the case for infrastructure components that are related to the provision of local services such as electricity and which cannot be moved outside the city or away from residences. This may at times be competing with residents' preferences.</p> <p>Bank Management cannot verify the particular case cited by the Requesters regarding the purchase offer and its withdrawal. See Item 1.2 above regarding policy aspects of this issue.</p>

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	<p>ported by these measures are likely to plummet because of the KPLC development plans and NEMA and World Bank approvals.</p> <p>It is a fact that the illegal construction has had the most severe consequences for the most immediate neighbor to the site, Mr Naul of 2 Njumbi Road. I am informed, and there is a letter to this effect, that the purchase offer on his property has been withdrawn as a direct consequence of the continuing work on the site which is regarded as indication of a fait-accompli regarding the future circumstances of the site.</p>	
9.	<p>A Njumbi Road resident, Mr David Rogers (11 Njumbi Road) has written to the NRRA as follows: "While an improvement in power supply and a reduction in the number of power cuts would be welcomed, the location of the new substation is regarded as inappropriate and illegal. We have invested heavily and in good faith, and strived for many years to maintain and indeed improve the beauty and tranquillity of this presumed strictly residential neighbourhood." The letter goes on to classify the site as an "eyesore" and a possible health-hazard, an issue to which will be addressed shortly. Both residents believe that their properties have been devalued and in the earlier case this has been demonstrated as true.</p>	<p>9. 1 Legality of substation siting</p> <p>See Item 1 above.</p> <p>9.2 Impact on physical attributes of neighborhood.</p> <p>See Item 1.2 above.</p>
10.	<p>An attempt has been made to canvas the opinion of residents of similar power stations elsewhere. An examination of those seen, show that they do not exist in the same close proximity to residential properties as does the Lavington site, which was also a residential property until its unannounced demolition. That action was completely contrary to both NEMA and CCN regulations. It is a fact that KPLC acted to conceal its activities from NRRA residents. It had an obligation to announce its intentions by the erection of a notice at the site. It failed to do so - a common practice among illegal developers. KPLC did not consult with residents but lied to NEMA and the World Bank that it did. It did not call a public meeting until forced to by the Residents Associations and it then totally ignored the universal opinion of the meeting that the development was inappropriate and unwelcome.</p>	<p>10. 1 Characteristics of substations elsewhere in Nairobi</p> <p>There are comparable substations in other residential areas of Nairobi such as Parklands and Westlands that are sited close to residential properties.</p> <p>10.2 Value of property</p> <p>See Item 1.2 above.</p> <p>10.3 Erection of notice at the site by KPLC</p> <p>To inform residents of the project and the construction works, KPLC erected a signpost at the construction site on March 21, 2011.</p> <p>10.4 Consultations with residents</p> <p>See Item 3.1 above.</p>
11.	<p>Further concerns involve the insidious effects of electromagnetic radiation on human health. Although the degree of risk is not fully quantified, all studies without exception agree there is a risk possibly involving childhood leukemia and other serious illnesses. Any risk, especially when forced on our community which includes a number of small children, is unacceptable. There is a requirement that for safety reasons there should be a buffer zone of not less than two hundred metres between the station and the nearest human habitation. In this case the station shares a common</p>	<p>11. 1 Health risks from electromagnetic radiation including the risk of leukemia</p> <p>Management notes that internationally recognized radiation protection agencies and national health agencies have reviewed the scientific literature and evidence available and have concluded that evidence is insufficient to establish a definitive causal relationship between low frequency magnetic field exposure and increased incidences of cancer and</p>

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	<p>wall with residences and the transformer is about ten metres from the nearest bedroom. In this case, the resident has attempted to sell his property and leave. There are no buyers for his one million dollar residence.</p>	<p>other illnesses. The WBG EHS Guidelines (Electric Power Transmission and Distribution) state that: <i>“Although there is public and scientific concern over the potential health effects associated with exposure to EMF (not only high voltage power lines and substations, but also from everyday household uses of electricity), there is no empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmissions lines and equipment.”</i></p> <p>The Requesters refer to a study by Wertheimer and Leeper from 1979, which examined incidents in Colorado between 1976 and 1977. The WHO states in this context: <i>“Many studies published during the last decade on occupational exposure to ELF fields have exhibited a number of inconsistencies. They suggest there may be a small elevation in the risk of leukemia among electrical workers. However, confounding factors, such as possible exposures to chemicals in the work environment, have not been adequately taken into account in many of them. Assessment of ELF field exposure has not correlated well with the cancer risk among exposed subjects. Therefore, a cause-and-effect link between ELF field exposure and cancer has not been confirmed.”</i></p> <p>Management refers to the recommendation of the ICNIRP which recommends for magnetic field exposure a general public limit of 100 μT (microtesla). The electromagnetic field strength close to transformers usually drops to 1–5 μT within 1–2 meters from the transformer and measurements with comparable substations have shown that the electromagnetic exposure becomes indistinguishable from the background due to other sources within five meters. Most OECD countries, including the EU, recommend a public exposure limit of 100 μT.</p> <p>Placing low-frequency transformers in residential neighborhoods is common practice worldwide, including OECD countries. Given more than a century of experience with this practice, the technical design of the substation cannot be considered “experimental” in any way.</p> <p>The US Environmental Protection Agency¹³ states that: <i>“Many people are concerned about potential adverse health effects. Much of the research about</i></p>

• ¹³ US EPA [website](#)

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		<p><i>power lines and potential health effects is inconclusive. Despite more than two decades of research to determine whether elevated EMF exposure, principally to magnetic fields, is related to an increased risk of childhood leukemia, there is still no definitive answer. The general scientific consensus is that, thus far, the evidence available is weak and is not sufficient to establish a definitive cause-effect relationship.”</i></p> <p><u>Measures proposed by Bank Management</u></p> <p>Management will propose that independent third party monitoring of the EMR be carried out by a technically qualified body and the results made publicly available.</p> <p>11.2 Requirements on distance of substation from residences</p> <p>The Bidding Document (Part 2.1) for the Lavington substation stipulates that the general technical specifications of the substation shall comply with the provisions and requirements of the standards of the IEC. The IEC 61936-1 standard (section 8.7.2.1) stipulates that for the type of outdoor transformers in the Lavington substation (two oil insulated 18/23 MVA, ground mounted transformers with a liquid volume of less than 20,000 liters), the guide value for clearances between the transformers and a combustible building surface is ten meters. The transformers are more than five meters from the perimeter wall of the substation that also borders the nearest Njumbi Road residence and are at least 13 meters from the residence itself.</p> <p><u>Measures proposed by Bank Management</u></p> <p>Since an extension to existing residences or a new building could be constructed less than ten meters from the transformers, Management will recommend to KPLC that it construct a fire and blast resistant wall along the perimeter of the substation bordering Njumbi Road residences to a height reasonably agreed with the owners of existing residences on contiguous properties. Such a fire resistant wall is recommended in IEC standard 61936-1 when it is not possible to site transformers more than ten meters from combustible building surfaces.</p>
12.	Brief reference has been made to health and safety issues. They will now be considered in more detail. Njumbi Road residents have had painful experiences with KPLC. The company cannot maintain a continuous power supply to the area. Breakdowns and power surges are a daily occurrence. Old and ill-maintained equipment, particularly transfor-	<p>12.1 Quality of power supply in Lavington</p> <p>Management notes that the quality and reliability of power supply is poor in Nairobi, including in Lavington. The reasons have to do with overloaded transformers on distribution lines (11kV lines such</p>

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	<p>mers, have been known to burst into flames, in one case setting fire to trees and destroying the motor vehicle of a resident, Mrs Saio of 4 Njumbi Road, a residence sharing a border with the proposed station site. It is understandable that she, and indeed all residents, fear this larger structure, that even the company admits brings a risk of fire and explosion and toxic oil spillage. Hardly attributes calculated to instill confidence or to enhance property values. The continuous noise consistent with a 24hour operation will inhibit sleep and cause psychological harm. This noise will permanently alter the afore-mentioned tranquility of the estate. Put another way, the environmental ambience will be adversely altered contrary to the NEMA CHARTER and World Bank project regulations. Another reason then, why the project should not be approved. But most invasive of all, is the silent short wave electro-magnetic radiation that can induce tumours, sickness and eventual death. The impact is most severe among the young. I draw your attention to a study "Electric Wiring Configurations and Childhood Cancer" by Wertheimer and Leeper which studied the deaths of 344 children who died from childhood cancer in just one US State. A dose response relationship was noticed for higher exposure dwellings with an incidence rate two or three times higher of leukaemia, lymphoma and cancers of the central nervous system than for lower exposure homes.</p>	<p>as those in the Njumbi Road estate). The construction of the Lavington substation and other substations in Nairobi under the ESRP is aimed at addressing such quality and reliability problems. When the substation is commissioned, it is anticipated that there will be marked improvement in quality and reliability of power supply to Lavington residents.</p> <p>The growth in demand for power within Nairobi City has been significant, especially within the Lavington area and surroundings where older single dwelling units are fast giving way to multi-storey apartment blocks and office buildings. Due to rising demand the quality of power has continued to deteriorate in this region. The supplies come from substations located further afield at Kileleshwa, Westlands, Ngong Road and Karen. Data for power supplies to the area for the period January 1–May 15, 2012, show over 35 percent of all power interruptions in the area are attributable to the stretched and highly loaded supply lines to the area. It is for these reasons that the proposed substation is constructed.</p> <p>12.2 Damage to property in Njumbi Road</p> <p>See Item 1.5 above.</p> <p>12.3 Noise levels during operation of the substation</p> <p>The technical specification of the substation require that the noise level of the transformer shall not exceed 78 dB(A) when tested in accordance with IEC standards (IEC 60076) and these values would be verified during both the equipment factory acceptance and commissioning acceptance tests. These specifications will be monitored by KPLC and the Bank team during supervision. KPLC has provided the Bank with the factory acceptance tests that were carried out on the two transformers that show the noise levels were below the set limit.</p> <p>The main source of noise at the substation would likely come from the hum of the transformer. The specifications require that the transformer and its auxiliary equipment operate without undue noise and that every care shall be taken in the design and manufacture to reduce noise to the level of that obtained in good modern practice. The noise level of the transformer shall not exceed 78 dB(A). Given the substation size, this sound level cannot be considered to be noise at the nearest residential house</p>

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		<p>outside the substation.</p> <p>WBG EHS Guidelines for Noise Management (1.7) stipulate that noise level limits should not exceed 55 dB(A) during daytime and 45 dB(A) during night-time.</p> <p>NEMA regulations (Legal Notice No. 61 of 2009: Noise and excessive vibration control regulations, 2009) are more onerous than WBG Guidelines. The NEMA regulation require that sound levels not exceed 50 dB(A) and 35 dB(A) during daytime and nighttime, respectively.</p> <p>On the issue of EMF health risk assessments, see the response to Item 11 above.</p> <p>Management has reviewed the SGS Environmental Noise Assessment Report prepared by SGS Kenya Ltd for eight substations that was completed on May 16, 2011 and has noted its conclusions that “the background noise levels during diurnal schedule at the sensitive receptors were within the Legal notice no. 61 of 2009 and World Bank Guideline values. However, during nocturnal schedule, the levels exceeded the limits stipulated in the Legal notice no. 61 of 2009.”</p> <p><u>Measures proposed by Bank Management</u></p> <p>Management will require that sound levels meet the NEMA regulation (Legal Notice No 61, 2009). This may require that KPLC erect sound abatement barriers in addition to the fire and blast resistant wall that Management will also recommend (see Item 11.2).</p> <p>Management will also recommend that KPLC engage a competent laboratory/consultant to measure sound levels at selected substations including the Lavington substation (the last such report “Environmental Noise Assessment Report” prepared by SGS Kenya Ltd for eight substations was completed on May 16, 2011) and to make these publicly available. Management will request KPLC to take remedial measures in case noise levels exceed permitted NEMA levels.</p>
13.	<p>In communication with KP&LC officials, NRRA requested information on actual Electromagenetic Radiation (EMR) dose rates, at the site, at the boundary of the nearest residence and inside the nearest dwelling. NRRA also requested legally-allowable exposure data and the likelihood of peak doses exceeding limits. This is fundamental information for Lavington residents yet the company refuses to comply. It also refuses to provide a copy of the KPLC Act,</p>	<p>13.1 Request of Njumbi Road residents to KPLC to provide information on EMR dose rate at the site</p> <p>KPLC has provided various documents: the Environmental Management and Coordination Act 1999; the Environmental, Health and Safety Policy Framework for the Electric Power Sub-sector 2005; the Energy Act 2006; the Occupational Safety and</p>

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	<p>a public document kept hidden from public scrutiny by the company. It is believed that this document contains regulatory measures preventing KPLC from placing its power equipment in close proximity to human habitation and contains specific information on required safety zones. It is normal practice in the developed world, that electric power generators and transformers, high tension lines and similar equipment are sited at a distance of between one or two hundred meters from human habitation. In this case, there is no way-leave with the power station abutting a Njumbi residence with its transformer only metres from the bedrooms. A letter from KPLC to the WB Country Office states that a way-leave exists. It does not and it is a serious omission of the World Bank not to verify the truthfulness of the KPLC claim.</p>	<p>Health Act 2007; and the Kenya Electricity Grid Code 2008. All of these documents are publicly available.</p> <p>KPLC informed the bank that there is no legal requirement for EMR exposure in Kenya.</p> <p>13.2 KPLC own requirements on placing substations transformers</p> <p>See 11.2 above.</p> <p>13.3 KPLC's requirements on clearance requirements from residences of 66kV sub-transmission and 11kV lines</p> <p>The minimum clearances for lines specified in the Bidding Document (Part 5.1.5.2) for the substation are the following relevant BS or IEC standards:</p> <ul style="list-style-type: none"> (i) 11 kV line conductor to any part of the building - 2.7m (8ft, 8 in). (ii) 33 kV line conductor to any part of the building - 5m (16 ft, 4 in) (iii) 66 kV line conductor to any part of the building - 7.5 m (24 ft, 6 in). <p><u>Measures proposed by Bank Management</u></p> <p>Bank Management will monitor during supervision that the clearances specified have in fact been adhered to.</p>
14.	<p>Brain tumours; Birth defects; Miscarriages; Chronic fatigue; Headaches; Cataracts; Heart problems; Stress; Nausea; Chest pain; Forgetfulness and I trust that I have not forgotten anything. KPLC suggest that cause and effect have not been proven. I would draw your attention to the fact that US Environmental Protection Agency recommended that Electro-magnetic frequencies be classified as a Class B carcinogen ranked with DDT, Dioxins and PCBs. I also ask this - Whatever the final determination of risk, should Kenya and the World Bank allow a pervasive and dangerous experiment where the outcome is uncertain, to be conducted on its citizens for the purpose of profit and the convenience of a company with a reputation for money-grabbing and inadequate service? KPLC cite the uncontrolled and mostly illegal high rise and multi-unit development that is taking place in other parts of Lavington and adjacent areas as the reason why a more extensive power network is necessary. We understand that. In Njumbi Road we have been careful of our environment, resisting attempts by developers to fill green spaces with concrete and drain our precious water-courses. There are more suitable sites. KPLC apparently failed to look for them. There is public</p>	<p>14.1 Health impacts of electro-magnetic radiation exposure</p> <p>See Item 11.1 above.</p> <p>14.2 Alternative sites</p> <p>The current site was identified by applying several conditions for substation construction. For technical reasons, it is necessary that substations be located close to the demand centers they are to serve. Using a willing seller, willing buyer approach, and placing an advertisement in the national newspaper, KPLC received five sale offers. One site had public user claims against it, another was not connected to a sewer, a third and fourth had technical limitations. The chosen site, while unavoidably close to a residence as is common in substations located in densely populated neighborhoods throughout the world, was in the vicinity of a Bank-financed sewer trunk project. This provided access to a sewer line in an area where the environmental ambience was already compromised. Given that substations pose a mana-</p>

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	land and other open ground to the South of the site which would have solved the legal, environmental and risk factors outlined in this document.	geable safety risk if properly administered, proximity to residences is not in itself sufficient reason to reject a location. According to KPLC, the alternative site mentioned to the south of the site is not suitable for the construction of a substation, due to the presence of a trunk sewer related to the above-mentioned project located directly across the street from the substation. In addition, this area across the street is adjacent to upper-income residential homes as well as a fairly large informal settlement.
15.	<p>It may also be relevant to note that the KPLC development is taking place adjacent to a wetland designated as a riparian reserve, a water catchment area and a flood plain. It is possible that the power-station contravenes the Water Act 2002 in relation to the protection of this fragile ecosystem, yet the EIA in its hundreds of pages, does not indicate consultation with the Water Resource Management Authority. This is another example of sloppy scholarship that characterizes this worthless document. As a geography primer it deserves a B minus; as a supposedly scientific document it fails completely, succeeding to my mind, only as a work of fiction.</p> <p>I submit that it then used dishonest tactics and fraud to gain development approval. It deliberately ignored legal orders to cease development and instead willfully destroyed the environment.</p>	<p>15.1 Proximity of substation to a wetland designated as a riparian reserve, a water catchment area and a flood plain</p> <p>WRMA informed the Bank (on June 8, 2012) that there is no gazetted wetland (protected area) in Lavington, or indeed in the Nairobi area. While the watercourse adjacent to the substation is heavily polluted, according to the Water Resources Management Rules 2007, a “watercourse” is defined as <i>“any natural channel or depression in which water flows regularly or intermittently, unless declared not to be watercourse under this Act.”</i> According to Water Resources Management Rules 2007, certain activities are proscribed within six meters from a watercourse (riparian land). KPLC informed the Bank that the substation does not violate this rule because permanent structures (transformers and the control building) are more than six meters from the watercourse. The Bank team confirms that the transformers and control building are indeed at a distance of ten meters from the watercourse. The pre-existing boundary wall of the substation (the closest point to the watercourse) is more than six meters from the watercourse.</p> <p>The EIA refers to the watercourse as follows: <i>“An open sewer trench originating from the nearby Kawangware slums runs through the proposed substation compound, but has been diverted so to flow near the edge of the compound.”</i>¹⁴ Previously, it used to run right through the middle of the compound.” Three of the six site photos in the EIA Appendix show photos of what is purported to be wastewater. Based on this description, the aerial photo and site map on pages 7 and 8, and the Bank team visit to the site in March 2012, the Bank team is of the opinion that the substation site and its surrounds cannot be considered an ecologically fragile habitat, as it is significantly degraded. Nevertheless,</p>

¹⁴ EIA, page 14

No.	Claim	Response
		per the Water Resource Management Rules 2007, cited above, a watercourse cannot be “declassified” (no matter how heavily polluted) unless declared not to be a watercourse under the Act. The EIA will be revised to correctly describe the watercourse.
16.	<p>NRRA requests that the World Bank observe the provisions of its Charter and Regulations and otherwise uphold the law.</p> <p>Further requests the World Bank to require KPLC to seek an alternative and more appropriate site for its development.</p> <p>Find in favor of the NRRA submission and require the proposed development in Lavington to stop immediately and to require KPLC to remove the illegally erected infrastructure and to restore the environment it destroyed.</p>	<p>16.1 Management believes that the Bank has made every effort to apply its policies and procedures and to pursue concretely its mission statement in the context of the project.</p> <p>In Management’s view, the Bank has followed the guidelines, policies and procedures applicable to the matters raised by the Request. As a result, Management believes that the Requesters’ rights or interests have not been, nor will they be, directly and adversely affected due to a failure of the Bank to implement its policies and procedures.</p>

Annex 2: Land Acquisition Process

1. KPLC has provided evidence to the Bank that land acquisition and conversion of the area from residential to light industrial purposes followed applicable laws and regulations in Kenya.
2. To acquire the land, KPLC made a public announcement on February 5, 2009 in *The Nation*, one of the major national newspapers, seeking land owners interested in providing their land, with details and prices. There were seven responses to the announcement from land owners. After visits by KPLC's technical team, a suitable site was identified and negotiations concluded. The sale could not be concluded, however, because the owner increased the price and declined to sign the sale agreements. KPLC subsequently searched for an alternative site, and five potential sites were identified. Following the screening of five sites offered for sale to KPLC, the site falling in LR No. 3834/518 was deemed suitable. The paper prepared by the KPLC Property Office for KPLC's Tender Committee noted "the site is ideal and sale price within market range. The site is also on sewer." The other four sites were rejected taking into consideration factors such as the price, public user claims, the size of the frontage, and accessibility. KPLC sealed a land sales agreement with the land owner on July 6, 2010. A Public Notice on Change of User and Application for Development Permission was published in *The Standard*, one of the major national newspapers, on July 29, 2010. The Notice solicited objections to the proposed development to be sent in writing to the Town Clerk, CCN within 14 days. The CCN issued a Notification of Approval of Development Permission for a change of use from Residential to Electrical Substation on December 7, 2010.

Annex 3: Note on the Environmental Impact Assessment of the Lavington Substation

1. **Environmental Category of ESRP.** The project is classified as a Category B. Given that the exact sites of the substations supported under the component were not known at the time of project appraisal, an Environmental and Social Management Plan (ESMP) was prepared, in accordance with OP/BP4.01 on Environmental Assessment. A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas—including wetlands, forests, grasslands, and other natural habitats—are less adverse than those classified as Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project and is narrower than that of a Category A EA, but it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. Once the substation site was identified, KPLC prepared an EIA Project Report in August 2010, and proceeded with implementation as per the EIA and ESMP.

2. **ESMP.** At the time of appraisal in 2008, the Bank considered that some of the less complex project activities/subprojects did not require the Bank's prior review and approval of the environmental assessment (EA) instruments, as the Borrower had adequate capacity to prepare and implement some of the EAs for the project. According to the ESMP, KPLC was required to submit copies of EIA reports to the National Environment Management Authority (NEMA) and the Bank for review and approval only in the case of subprojects categorized as more complex (B2) under the ESMP. In December 2007, KPLC provided the Bank a full list of subprojects that – based on screening – could be considered less complex projects (category B1), for which submission to and approval by the Bank of EIAs was not required under the ESMP. The Lavington substation (included as part of the Nairobi Area substations) was classified as B1 and hence a simplified EIA was prepared in August 2010. The Bank considers the simplified EIA with the incorporation of subsequent documents detailing additional consultations (see below) to be of an acceptable quality.

3. **EIA.** The EIA Project Report was submitted to NEMA on September 8, 2010. NEMA wrote to KPLC on October 13, 2010 requesting it to carry out further consultations with the “project neighbors and resident association” (see Item 3 below for dates of these consultations).

4. **Consultations.** OP 4.01 requires that stakeholders affected by the project be adequately consulted. It does not require consent. The series of consultations undertaken by KPLC for the substation subproject is in line with Bank policy applicable to such projects, albeit with some delays. Management agrees with the Requesters that the initial consultations contained in the EIA are inadequate. Four consultation meetings with people potentially affected by the project were held, namely: (i) during the preparation of the EIA in July/August 2010; (ii) after KPLC submitted the EIA to NEMA on September 8, 2010 and NEMA requested further public consultations on October 13, 2010, KPLC distributed about 20 questionnaires and received nine res-

ponses signed by the respondents on various dates (November 24, and December 6, 2010); (iii) on February 22, 2011 with the Requesters' representative and 28 other participants, (including eight members of KPLC staff); and (iv) on February 28, 2011 at the Requesters' representative's residence (the minutes of this consultation also confirm an offer for the Requester to meet the CEO of KPLC should he have any further concerns – this offer was not responded to by the Requester). The consultations that took place in November/December, 2010 are considered under Government of Kenya law to constitute part of the EIA Project Report.

5. In response to the concern expressed by stakeholders that trees were cleared in the project area, KPLC explained that the existence of tall trees within a substation pose a safety hazard. KPLC agreed to plant smaller trees within the project area. KPLC responded to a stakeholder's concern that felled trees were touching his electrified fence, posing a safety hazard, by apologizing and proposing to immediately remedy the situation. KPLC also informed stakeholders that it would require the contractor to put up a hoarding before starting construction of the perimeter wall. KPLC agreed to share the EIA and all permits received with the stakeholders. With regard to stakeholder concerns about electromagnetic radiation and other health and safety concerns, KPLC reassured them the incoming 66kV feeders would be run underground insofar as possible (thereby also preserving trees) and that the perimeter wall to be built around the substation would be manned around the clock. To limit noise emissions, KPLC said that all noise emissions would be kept within NEMA set limits (these are stricter than WBG EHS Guidelines limits) and KPLC promised to gather statistics on noise emissions at other substations for comparative purposes.

6. **Petition Letter.** The Requesters' claim that the petition opposing the development represents one hundred percent of affected and contactable persons cannot be verified by the Bank (the number of signatures found in the letter is less than 150 and some addresses are outside the project area). Eight respondents in the set of questionnaires that form part of the second consultations support the project. The Requesters have claimed that these persons do not live in the project affected area. This cannot be definitively confirmed or refuted.

7. **EIA Submission to the Bank.** In March 2012, upon the Bank's request, KPLC forwarded the EIA and subsequent documents detailing additional consultations. The Bank considers the simplified EIA (with the incorporation of subsequent documents detailing consultations) to be of an acceptable quality.

8. **Potential Impacts during Construction.** Potential negative impacts during construction were identified in the EIA Project Report for the substation (August 2010) and include: (i) loss of faunal habitats through the clearing of vegetation; (ii) soil erosion in areas that will be cleared of vegetation; (iii) strains on resources available, including water, in the short term; (iv) dust generation; (v) damage to neighboring roads; (vi) noise pollution in the neighborhood; (vii) waste from temporary toilets; (viii) occupational health and safety of construction workers; (ix) risk of sexually transmitted diseases; (x) visual intrusion; and (xi) solid waste.

9. **Mitigation Measures during Construction.** The construction work at the Lavington substation site is approximately 80 percent complete. During the construction, KPLC's Safety,

Health and Environment Department inspectors carried out routine safety and environment inspections on August 29, 2011 and January 27, 2012. According to the inspection report of August 29, 2011, the inspection found that generally the construction work was going well and in compliance with most of the EMP recommendations. Despite the good progress a few shortcomings on the part of the contractor were noted in the report and the contractor was directed to make improvements. Some of the shortcomings identified included: (i) the need for more regular water sprinkling to suppress dust; (ii) the need for enforcement of personal protective equipment rules; and (iii) the need to improve signage (for example, to indicate that there are heavy trucks and vehicles turning). In the report of January 27, 2012 the need for improvement of water sprinkling was again recommended as was the need for the contractor to install more signage (e.g., Heavy Trucks/Vehicles Turning). The Contractor was cautioned to ensure that feeders were run along the road reserve.

10. **Potential Impacts during Operation.** Potential impacts during operation identified in the EIA Project Report (August 2010) could include: (i) electromagnetic non-ionizing radiation; (ii) wastewater from toilets; (iii) risk of fire and explosion; (iv) risk of electrocution to members of the public and employees; (v) humming noise from the transformers; and (vi) oil spillage from the transformers.

11. **Mitigation Measures during Operation.** The Bank team will ensure during supervision that mitigation measures are implemented as per the EIA/ESMP, including: (i) wastewater from toilets should be appropriately channeled into the municipal sewerage system; (ii) transformers, equipment, and surrounding areas should be periodically and routinely maintained; (iii) qualified authorized operational staff should work at the substation; (iv) the substation should be fenced with a secure boundary wall; (v) Danger/Caution warning notices should be placed where necessary; (vi) suitable fire-fighting appliances should be installed at the substation; (vii) emergency response measures should be put in place; and (viii) transformer should have an oil containment pit to accommodate any spilled oil. See also paragraph 62.

Annex 4: Chronology of Correspondence

April 2011 – June 2011

1. The World Bank Country Office received the letter of Mr. David Bell dated April 10, 2011 on April 13, 2011. Between April 13 and 29, 2011, the Task Team Leader (TTL) spoke to the Project Manager in KPLC and received assurances from him that adequate consultations had taken place with the residents. The TTL then followed up this conversation by email to the Manager of KPLC's Safety, Health and Environment (SHE) Department on April 29, 2011 requesting a description of consultations with the residents and the agreements reached with them. The TTL received an email reply from the SHE Dept. Manager on May 5, 2011. The email provided a chronology of events including the consultations held (with photographs) and attached five documents: (i) Public Notice of Change of User and Application for Development Permission; (ii) Approval of Development Permission and Change of Use; (iii) Minutes of Public Consultation and Sensitization held on February 22, 2011; (iv) Minutes of the meeting held with the Acting Chairman on February 28, 2011; and (v) EIA license for the project from NEMA. The TTL replied to the SHE Dept. Manager on May 5, 2011. In a separate email on May 5, 2011 the SHE Dept. Manager informed the TTL that "the complaint filed by the Chairman of the Njumbi Road Residents' Association had not kicked off yet as the tenure of the National Environmental Tribunal (NET) had expired... Our legal department has been keenly following this matter and are ready to represent KPLC at the NET hearings once it starts."

2. On May 30, 2011 Mr. David Bell sent a letter addressed to the Country Director expressing disappointment that there was no acknowledgement of the letter dated April 10, 2011. The TTL acknowledged this letter on May 31, 2011 by email to Mr. Bell attaching all the documents that he had received from KPLC and requesting a copy of the Stop Order to which Mr. Bell's letter of May 30, 2011 referred. On May 31, 2011 the TTL emailed the SHE Dept. Manager asking him to clarify the Stop Order issue. On June 1, 2011 Mr. David Bell responded to the TTL by email raising questions about the consultation process. The Stop Order was emailed to the TTL on June 8, 2011. The TTL emailed the SHE Dept. Manager again on June 8, 2011 asking him to clarify the situation with respect to the Stop Order. On June 14, 2011 the SHE Dept. Manager responded that "the matter/hearing has not kicked off yet as the tenure of some Commissioners at NET expired and the re-appointment by the Government has just been done." The TTL again emailed the SHE Dept. Manager on June 16, 2011 requesting clarification, stating that it was not clear whether KPLC considered the Stop Order to be in force or not.

June 2011 – March 2012

3. The TTL did not have any further written communication with either Mr. Bell or with KPLC on the matter until March 21, 2012. Between June 2011 and March 2012, the TTL understood that the matter was ongoing at NET. During the period from May 30, 2011 to March 19, 2012 the TTL did not receive any communications from Mr. Usher or Mr. Bell. KPLC subsequently explained to the Bank (in May 2012) that it did not respond in writing to the TTL's requests of May 30, June 8, and June 16, 2011 for further information on KPLC's legal stance on

the Stop Order in view of the legal proceedings that were taking place at NET because some of that information could have implications for KPLC's legal strategies.

March – May 24, 2012

4. On March 19, 2012 the TTL received a letter from Mr. Peter Usher that was copied to the NEMA Director General and the KPLC Managing Director requesting the Bank to carefully review the project. The letter mentions that 150 Njumbi Road residents had signed a petition opposing the development. On March 21, 2012 the TTL emailed the SHE Dept. Manager requesting clarifications on the issues raised by Mr. Usher. The team's environmental specialist and the TTL spoke on the phone to the SHE Dept. Manager and the TTL followed up the call with an email on March 21. On March 29, 2012 the environmental specialist and the TTL visited the site together. On March 30, the TTL and the environmental specialist visited KPLC and met with the SHE Dept. Manager and his team. The EIA and subsequent documents relating to stakeholder consultations were examined in KPLC's offices during the visit. The SHE Dept. Manager referred the TTL to a Legal Officer in KPLC who was handling the case at NET. The TTL met with the Legal Officer on March 30, who informed him that an outside legal firm was advising KPLC; he said he would request the legal firm to provide the Bank with the KPLC submissions to NET. The TTL did not receive the information requested then (it was only after May 25, 2012 that documents related to KPLC's submissions to the NET were provided to the Bank team). The TTL replied to Mr. Usher on April 3, 2012 (copied to the NEMA Director General and the KPLC Managing Director) stating he would revert after consulting with KPLC. The TTL made several calls to the Legal Officer and sent email reminders on April 3 and 30 to him that were copied to the KPLC Company Secretary requesting information on the proceedings at NET which he had been told were still ongoing as well as "the submissions made on behalf of the parties and the decision of the hearing." The TTL sent an email to Mr. Usher on May 16, 2012 regretting the delay in reverting to him and informing him that the Bank was seeking further information from KPLC on the case.

May 25, 2012 - June 15, 2012

5. The Inspection Panel sent the Request for Inspection to Bank Management on May 24, 2012. Bank staff in Nairobi had a number of meetings with KPLC between May 25, 2012 and June 15, 2012. The purpose of the meetings was to seek further clarifications and documentation from KPLC on its actions including on the EIA consultations, land zoning process in obtaining approval for land use change, maps, routine safety and environmental inspection reports of the Lavington substation, and CCN approval certificate for tree-cutting and other documents.

6. Bank staff in Nairobi met with the Requesters on June 12, 2012. The Bank staff and the Requesters visited the substation together and the Requesters described their concerns to the Bank staff.

Annex 5: Pictures of the Substation and Vicinity



Picture 1: Substation site with the two transformers.



Picture 2: Substation site. Residences in the background.



Picture 3: Substation site, Street front view (from Chalbi Drive).



Picture 4: Substation site North view. Residence of one of the Requesters in the background.



Picture 4: South view from the substation site with dwellings in the background.



Picture 5: South view from the substation site with dwellings in the background.



Picture 6: Degraded watercourse adjacent to the substation site.



Picture 7: View from one of the Requesters' property on the substation (Country Director and Bank Team meeting with the Requesters).



Picture 8: View from one of the Requesters' property on the substation.