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Annexure 1: Critique of Kusile Environmental Impact Report

Subject: Comments on Kusile coal fired power plant Final Environmental Impact Report

Mr. Mahoney,

Please find attached our initial review of the Kusile coal fired power plant Final Environmental Impact Report (EIR).

The Sierra Club, Groundwork and Pacific Environment reiterate our formal objection to potential Ex-Im Bank financing of the Kusile coal fired power project in South Africa. If completed, Kusile would be one of the world's largest greenhouse gas-emitting coal power projects fueled by heavily polluting and harmful fossil fuel technology. A decision to fund this project would hamper not only the sustainable development of South Africa but also a thriving United States clean technology export sector.

Analysis of the project's EIR reveals several violations of Ex-Im Banks Environmental Procedures and Carbon Policy. The document supplies a flawed alternatives analysis that indicates a pre-determined outcome in favor of coal power, which promotes high carbon growth for South Africa. According to the project EIR, Kusile would increase the South African energy sector's CO2 equivalent emissions by 12.8%. This is particularly distressing considering that International Energy Agency statistics indicate that CO2 emissions intensity (kg CO2/2000 USD) of South Africa is nearly four times that of the United States.

The project EIR also identifies a host of local environmental, health and economic impacts. For example, the EIR states that due to existing levels of sulphur dioxide in the area, it would be impossible for the project to adhere to internationally recognized emissions limits. Add to this the impacts of an above ground toxic fly ash dump and the

lack of adequate mitigation measures for nitrogen oxide emissions, and it becomes clear that this project would cause significant harm to local populations.

In conclusion, violations of Ex-Im Bank's Environmental Procedures and Carbon Policy—including those with global and local impacts—should compel Ex-Im Bank Board of Directors to reject financing for the project. We strongly urge Ex-Im Bank to adhere to its Environmental Procedures and Carbon Policy by rejecting financing for Kusile and by refocusing Ex-Im Bank efforts on environmentally beneficial transactions.

Sincerely,

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Annexure 1: Critique of the Kusile Final Environmental Impact Report

The following presents findings of an initial review of the Final Environmental Impact Report (EIR) for the 2008 Environmental Impact Assessment Process: Proposed Coal-Fired Power Station and Associated Infrastructure in the Witbank Area (formerly called the Bravo project; now called the Kusile project). This review identifies several violations of the U.S. Export-Import Bank's Environmental Procedures and Carbon Policy. This review includes several sections:

1) National Significance of Climate Change Impacts;
2) Incomplete Project Description and Environmental Analysis;
3) Inadequate Alternatives Analysis;
4) Lack of Low Carbon Growth Strategy;
5) Community Health, Safety and Socio-Economic Impact;
6) Environmental Management Plan.

1) National Significance of Climate Change: According to the project EIR, the projected annual Greenhouse Gas (GHG) equivalent emissions for this single project – 36.8 million tons –"would increase the South African energy sector's CO2 equivalent emissions by some 12.8% and would increase the country's contributions towards the emission of greenhouse gasses by some 9.7%". Despite the immensity of these climate impacts, the EIR dedicated less than two pages of a 158-page document to the subject with no specific direct mitigation measures proposed. The carbon intensity implications of financing this project are clearly not in line with Ex-Im Bank's Carbon Policy.

2) Incomplete Project Description and Environmental Analysis: Ex-Im Bank's Environmental Procedures Annex E: Environmental Impact Assessment Reports (hereafter EIAR Annex E) calls for a project description, including "any offsite investment that may be required (e.g. …raw material and product storage facilities)." The Kusile power plant will source some coal from existing mines, but the bulk is expected to come from Anglo's New Largo project, a 'greenfield' development.[1] The Kusile EIR states that there have been "numerous calls for this EIA process to be integrated with the EIA currently being undertaken for the proposed mine which will supply coal to the power station." The EIR declines to do so, citing various reasons, but concludes that: "[i]t is advised that anyone who wishes to consider the cumulative impacts of both the proposed power station and coal mine involve themselves and participate in both EIA processes." Yet, according to an independent consultant's EIR review, which was provided by Ex-Im Bank, "[t]he two activities are so integrally related that it is difficult to envisage how DEAT or DME [South African authorities] can consider cumulative effects to have been adequately evaluated without the findings of both studies being available and fully integrated.[2]

[1] The World Bank and Eskom: Banking on Climate Destruction, David Hallowes, Groundwork, December, 2009, at pg 15.
[2] Independent Review – Eskom's Proposed Coal Fired Power Station in the Witbank Area, Mark Wood Consultants, 16 February, 2007

Given international best practice and Ex-Im Bank's inclusion of offsite concerns in EIAR Annex E, Ex-Im Bank must require that the potential environmental and social impacts (including cumulative impacts) of the proposed offsite mine be fully integrated and included in Ex-Im Bank's policy compliance due diligence, and that the EIA for the mine be disclosed by Ex-Im Bank for public comment.

3) Inadequate Alternatives Analysis: EIAR Annex E calls for an analysis of alternatives—including the "without project" alternative. According to the EIR, eight project sites were considered—including a "no-go" alternative.

The EIR arbitrarily dismisses the "without project" or "no go" alternative, stating: "South Africa is expected to require additional baseload generating capacity by 2010 and beyond. The 'no-go' alternative is likely to result in these electricity requirements not being met, with concomitant potentially significant impacts from an economic and social perspective for South Africa." From this, the reader is expected to conclude that coal is the only potential source of power available and the absence will result in "electricity requirements not being met." This appears to be more of anti-alternative polemic than a thoughtful "without project" analysis and it ignores the possibility that there is much potential in South Africa to utilize renewable energy and energy efficiency.

According to the EIR, criteria used to prioritize site selection include:

- Operational logistics – distance from coal, reliability of supply;
- Land use – current use, future use, existing infrastructure, tourism potential;
- Geology/Geomorphology – topography, founding conditions, groundwater contamination potential;
- Ecology – indigenous terrestrial and aquatic habitat;
- Local air quality – proximity and vulnerability of potentially affected communities; and
- Socio-economics – social issues, job creation, tourism, safety and security, aesthetics.

Most of these criteria relate to proposed project sites. However, EIAR Annex E calls for an analysis of alternatives based on more than just site-related criteria—it includes an analysis of alternative technology which, for energy projects, includes renewable energy technologies. Yet, the EIR only compares Kusile with other types of coal power plants—not other types of energy generation technology. Moreover, Annex E calls for additional analysis that was not performed by the EIR, including:

> "The feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement."

The EIR's cursory analysis of alternatives—which excludes analysis of renewable energy alternatives—indicates that the project sponsors made a decision before the EIR was conducted that prejudices the outcome of the EIR. This, together with the lack of the additional qualitative and quantitative analysis requirements described above demonstrates that the EIR contravenes both the letter and the intent of Ex-Im Bank's Environmental Procedure requirements.

Further, Ex-Im Bank's Carbon Policy Annex G: Supplemental Guidelines for High Carbon Intensity Projects (Carbon Policy Annex G) requires that the buyer provide the following additional alternatives analysis:

> Alternatives Analysis: The buyer must provide a satisfactory analysis of project alternatives demonstrating that available low carbon intensity technologies were considered prior to the project selection. The analysis should demonstrate that the selection of the project, including the fuel type, represents the least cost alternative available. The buyer should take into account current and projected costs associated with CO2 production, such as fees, taxes or regulatory compliance costs. Finally, the analysis shall contain an evaluation of technically and financially feasible cost-effective options to reduce or offset project-related CO2 emissions during the project's operation.

According to Annex G, this information must be provided by the buyer to Ex-Im Bank for inclusion in Ex-Im Bank staff's Enhanced Due Diligence Memorandum that is to be sent to the Ex-Im Bank Board of Directors. The Board of Directors will then:

> [D]ecide whether the Bank should proceed with a full review (including a complete environmental review) of the transaction, and whether to impose any conditions relating to the project's production of greenhouse gas emissions.

The Kusile EIR was completed in 2007. Thus, any alternatives analysis that the buyer now provides in an attempt to comply with Ex-Im Bank's Environmental Procedures and Carbon Policy will have a prejudiced outcome based on the pre-existing decision to move forward with coal power—rather than an analysis that is required to be "considered prior to the project selection." This demonstrates that the Kusile EIR, and indeed the Kusile project are irrevocably in contravention with letter and intent of Ex-Im Bank's Environmental Procedures and Carbon Policy.

4) Lack of Low Carbon Growth Strategy: Ex-Im Bank's Carbon Policy Annex G requires that "[t]he host country shall have developed a Low Carbon Growth Plan or Strategy and the project must be consistent with the results and objectives of that Plan." Yet, the South African Government is heading in the opposite direction, prioritizing high carbon growth with high intensity energy (including an extensive increase of coal) as a driver. South Africa is already among the world's largest per capita greenhouse gas emitters, with the CO2 emissions intensity four times that USA[3]. What's more, emissions from Kusile will likely preclude the Government of South Africa from

[3] http://iea.org/stats/index.asp

achieving its stated desire to reduce greenhouse gas emissions by 34% by 2020[4]. This demonstrates a prima facie violation of Ex-Im Bank's Carbon Policy, requiring that Ex-Im Bank Board of Director's enhanced due diligence results in a decision to reject consideration of financing for the project.

4) Community Health, Safety and Socio-Economic Impact: The EIR states that the construction of the Kusile project will involve the introduction of between 2,000 and 6,000 people to the construction site area. Construction projects of this enormity usually involve an influx of large numbers of construction workers into local areas which are typically unprepared to deal with associated impacts. Too often the result is housing shortages, inflation in costs for housing, food and many essential products, heavy burdens on local community infrastructure, including energy, water, sewage, health and safety services, roads, increased air pollution, the potential for increased violence and the spread of sexually transmitted disease.

The Kusile EIR acknowledges some of these impacts, yet in some instances proposes only vague mitigation measures and in other instances no mitigation. For example, the EIR acknowledges that "people will be looking for property to buy or rent, which could push the prices up in the area, making the market inaccessible for the locals." Yet, there is no mitigation measure required, such as the provision of adequate company housing and other human services for all expected workers that could prevent the acute negative impacts to surrounding communities and areas.

The EIR acknowledges that HIV/AIDS has reached pandemic proportions in South Africa and that the influx of construction and operations workers to the Kusile power plant may bring with it "a greater rate of HIV infections and greater pressure on the Gauteng and Mpumalanga Health departments to manage and care for HIV infected people in their areas." The EIR acknowledges that "health care facilities will be required, such as clinics, and staff such as doctors and nurses will be required to staff these facilities in the area." However, the EIR states that the government's provision of necessary increased levels of essential services is likely to be very slow, "resulting in greater impact for those established in the area, and the new arrivals." While this may be accurate, it reflects an attempt to externalize negative project impacts and mitigation measures to unprepared local governments—which should instead be internalized and prevented by the project sponsors. This demonstrates a violation of EIAR Annex E requirement for an Environmental Management Plan that "describes mitigation, monitoring and institutional measures to be taken during construction and operation to eliminate adverse impacts, offset them, or reduce them to acceptable levels."

Depending on final site decisions, the plant would require the relocation of 27-43 families (around 300 people). With the aid of the Expropriation Act, Eskom can determine "appropriate" compensation value for the land required for the project. In a particularly cynical and Orwellian fashion the EIR suggests leasing back expropriated land to displaced farmers as a "mitigation measure" to reduce the economic impact. Moreover,

[4] "Summary of GHG Reduction Pledges Put Forward by Developing Countries", WRI, 2009. http://pdf.wri.org/summary_of_non_annex1_pledges_2010-06.pdf

the project would be required to comply with IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement. Yet, the EIR commits only a few cursory paragraphs to the topic, which do not describe Performance Standard 5 requirements (including a Resettlement Action Plan), much less demonstrate compliance with them. This shows a violation of Performance Standard 5. Meanwhile, the omission of any discussion of the applicability of IFC Performance Standard 5 is itself a violation of EIAR Annex E, which requires the EIR to discuss the policy, legal, and administrative framework within which the EIR is carried out. Indeed, the EIR scarcely describes any World Bank/IFC policies to which the project is required to adhere.

Despite the fact that the plant is being built in the name of poor South Africans the projects EIR states that less than 50% of the economic benefit will be accrued to South Africa as more than half of project financing will be spent on imported equipment and hiring of foreign specialists. In addition, the poor in South Africa consume less than 5% of grid connected power, in contrast to the 38 largest corporations that consume 40%. In reality, the poor are paying far more for their electricity than export-oriented metals and mining industries that overwhelmingly benefit from these projects while repatriating the vast bulk of their profits abroad.

Air Pollution: Kusile is situated in the "the Highveld Priority Area," which is declared a national air pollution hotspot in terms of Section 18(1) of the National Environmental Management: Air Quality Act 2004 (Act No. 39 of 2004) (AQA).[5] The area contains several sources of air pollution, including a range of industrial, mining and agricultural activities including: power stations; timber and related industries; metal smelters; petrochemical plants; brick and stone works; mines (primarily coal mines); fertilizer and chemical producers; explosives producers; charcoal producers; and other small additional industrial operations. Furthermore, many households still utilise coal as an energy carrier. Kusile would worsen the already deteriorated air quality of that area and increase the negative health impacts in the area. According to an independent consultant's review of the EIR, which was provided by Ex-Im Bank, "[t]he NEM-AQA SO2 ambient air quality standards are already exceeded in the area in which the alternative sites are situated. The air quality is assumed to be equally degraded for all of these sites. (Eskom, Final Site Selection Report, page13) and none of them, therefore, can be considered to be a suitable alternative if compliance with NEM-AQA is a site selection criterion."[6]

According to an air quality impact assessment report provided to Ex-Im Bank "Emissions from the existing Kendal Power Station [another power station in the area] are predicted to be responsible for exceedances of SA standards particularly downwind of the facility. Given this baseline it is evident that no future development resulting in sulphur dioxide emissions within the same area can be in compliance with the SA standard….Even given

[5] See R12,5m air pollution project under way, Petronel Smit, Engineering News, 30 October, 2009, available at http://www.engineeringnews.co.za/article/measurement-of-air-pollution-hot-spots-under-way-2009-10-30

[6] Independent Review – Eskom's Proposed Coal Fired Power Station in the Witbank Area, Mark Wood Consultants, 16 February, 2007.

a 90% control efficiency for all power station configurations, cumulative sulphur dioxide concentrations would exceed the SA 10-minute standard at the maximum impact zone and at Phola and the SA daily standard in the maximum impact zone and Phola – primarily due to emissions from the existing Kendal Power Station..”[7]

Sulphur dioxide – According to the U.S. Environmental Protection Agency, SOx, including SO2 contributes to serious cardiovascular and respiratory illnesses such as asthma and heart disease, and can cause premature death[8]. The project EIR demonstrates that the current ambient background Sulphur levels already far exceed permitted levels. Therefore, the project will only serve to add to these dangerously high levels rendering the area even more unable to comply with internationally recognized limits for toxic sulphur emissions. According to an EIR, “The exceedances [of existing sources] were a factor of 6 times above hourly SO2 limits, for more than 200 hours per year; and 20 to 30 days per year…making it challenging for cumulative concentrations to be within limits regardless of the site selected, the stack height or the SO2 control efficiency implemented… even for the best case scenario, exceedances still increased by some 30% above the future base case scenario…Impacts on human health as a result of the additional emissions of SO2 are therefore deemed to have a high (-ve) significance.”

Toxic fly ash – Coal ash from coal burning contains heavy metals and other toxics such as arsenic, chromium, lead and mercury, which in the U.S. has been linked to cancer, and neurological and developmental disorders.[9,10,11]. Fly ash is type of coal ash. Approximately 1,000 ha of land would be required to accommodate a toxic above ground fly ash dump for the life of the coal fired power station i.e. 40 – 50 years. According to the EIR, this dump, and along with other project elements, “could have direct and indirect impacts on the aquatic environment… The impact…would have a high magnitude and long term duration. Accordingly a high…significance impact is anticipated.”

Nitrogen oxides – NOx can mix with other compounds to produce volatile substances and can cause or worsen respiratory and cardiovascular illnesses such as emphysema, bronchitis, and heart disease, increasing hospital emissions and premature death[12]. According to an air quality impact assessment provided to Ex-Im Bank, “Kendal Power Station contributes to ambient nitrogen oxide and nitrogen dioxide concentrations in the region, with short-term international air quality limit exceedances predicted, to occur over sections in the study area.” Thus, Kusile would add to these exceedances, and “[p]redicted NO2 hourly concentrations were predicted to exceed SA nitric oxides standard and the SANS/EC limit respectively (including cumulative concentrations due to

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[7] Air Quality Impact Assessment for the Proposed New Coal-Fired Power Station (Kendal North) in the Witbank Area, October 2006, Airshed Planning Professionals (Pty) Ltd., at pg. vi, vii.
[8] “Heath Impacts of Sulphur Dioxide”, US EPA. 2009. http://www.epa.gov/air/sulphurdioxide/health.html
[9] Lombardi, Kristen, *Coal Ash: The Hidden Story*, The Center for Public Integrity, 2009. http://www.publicintegrity.org/articles/entry/1144
[10] Tennessee Coal Ash Spill Revives Issues of its Hazards, Shaila Dewan, New York Times, November 25, 2008, available at http://www.nytimes.com/2008/12/25/world/americas/25iht-25sludge.18914065.html
[11] Coal’s Ash is On The Line, Lyndsay Moseley, Sierra Club Compass, available at http://sierraclub.typepad.com/compass/2009/09/coals-ash-is-on-the-line.html
[12] “Heath Impacts of Sulphur Dioxide”, US EPA. 2009. http://www.epa.gov/air/nitrogenoxides/health.html

existing sources of emissions)."[13] Despite these predicted exceedances, the project EIR avoids addressing specific mitigation measures for NOx pollution, stating they are "…not considered in any further detail."

5) Environmental Management Plan: Ex-Im Bank's EIAR Annex E calls for EIRs to include Environmental Management Plans. The Kusile EIR Annexures include only an outdated preliminary Environmental Management Plan, while the EIR states that a comprehensive Environmental Management Plan is being developed. The omission of the Environmental Management Plan in the EIR precludes the EIR reviewer and Ex-Im Bank from having an ability to determine the adequacy of the Plan, therefore the EIR cannot be deemed adequate and in compliance with Ex-Im Bank's Environmental Procedures.

Conclusion: The Kusile EIR shows that the project fails on several fronts—in terms of both local and global climate impacts—to comply with Ex-Im Bank's Environmental Procedures and Carbon Policy. Ex-Im Bank financing of this project would therefore violate these policies and represent a serious misuse of precious public financing. We strongly urge Ex-Im Bank to adhere to its Environmental Procedures and Carbon Policy by rejecting financing for Kusile and by refocusing Ex-Im Bank efforts on environmentally beneficial transactions.

[13] Air Quality Impact Assessment for the Proposed New Coal-Fired Power Station (Kendal North) in the Witbank Area, October 2006, Airshed Planning Professionals (Pty) Ltd., at pgs. iii, vi.