SOUTH AFRICA

Eskom Investment Support Project (EISP), Eskom Medupi Power Project (EMPP),
Implementation Support Mission
May 30 – June 8, 2016

Aide Memoire on Environmental and Social Safeguards

1. A joint African Development Bank (AfDB) and World Bank (WB) mission visited South Africa from May 30 to June 8, 2016. The mission reviewed implementation of the Eskom Medupi Power Project (AfDB) and Eskom Investment Support Project (for WB). The mission visited the Medupi Power Station site from June 1 -3, 2016. Meetings were held with officials of Eskom, Department of Public Enterprises (DPE), Department of Water and Sanitation (DWS), Department of Environmental Affairs (DEA), National Energy Regulator (NERSA), Department of Mineral Resources (DMR) and the National Treasury.

2. The mission expresses its appreciation to Government and Eskom officials met during the visit for their invaluable contributions and acknowledges, with thanks, receipt from Eskom of detailed Power Point presentations on the status of each project component. This Aide Memoire summarizes the mission’s main findings on environmental and social safeguards and agreed next steps.

3. **Environmental management is assessed to be satisfactory and compliant.** The mission reviewed the overall implementation of environmental management plans for the Medupi site. Based on the site visit and review of monitoring reports, the mission reconfirmed that the Medupi power plant continues to comply with all regulatory requirements consistent with the South Africa’s regulatory framework for environmental management. The mission also concluded that environmental management of transmission lines is satisfactory.

**Status of Heritage Impact Assessment of Grave Sites at Medupi**

4. **Issue of Graves.** The mission commended the Eskom team for resolving the graves issues, following an independent, open, transparent processes through a heritage impact assessment (HIA). Eskom team diligently implemented recommendations from the CRL Rights Commission, including: Access to the graves to affected communities; information regarding the location of graves in cases where exhumation had taken place; identified and moved the graves, in accordance with family wishes and all the legal requirements. Respecting the demands of affected communities, Eskom diligently followed the relevant rights, rituals, customs, and spiritual practices and supported the conduct of a final symbolic cleansing ceremony on Saturday 14 May 2016 conducted by affected family members as part of the implementation of the recommendations of the HIA and included construction of a memorial plaque/plinth in memory of all those affected at Eskom site. The memorial was opened to public in May 2016 by the Deputy Minister of Public Enterprises and Eskom CEO, where affected families expressed their satisfaction and appreciation of Eskom’s efforts. Overall, the mission understood that this matter has now been handled to satisfaction of all the parties, and most importantly to the satisfaction of the family members, as the recorded speeches on the occasion cleansing ceremony attest.
5. **Sand mining in the Mokolo River.** The mission followed up on the issue of sand mining with the Department of Environment Affairs (DEA) and Eskom. While realizing the need to follow a regulatory process to resolve this issue, the mission expressed concern with the delays in completion and sharing of the assessment report. The mission was informed that a Technical Report was prepared by an independent Environmental Assessment practitioner on behalf of Labonte 5 (Pty) Ltd, as part of their application to the Limpopo Department of Economic Development, Environment and Tourism (LEDET). The mission recommends that the DEA and LEDET, based on their review, consider to undertake a supplementary review to verify key findings, particularly in relation to ecological damage to the river ecosystem. It is noted that this report covered only 20 km section of the river, which is considered by the DEA as sufficient to determine the extent of the cumulative impact caused by all the operators in that area.

6. **The report concludes that:**

   a) the past mining activities of the related entities have not caused a decrease in sand levels below the historic level, and that the past mining activities have in fact improved the ecological integrity of the aquatic habitat of this section of the Mokolo River.

   b) The public consultation has been adequately addressed.

   c) There is no evidence to indicate that the future sand mining activities would be unsustainable, as the study concludes that the adverse impacts can be mitigated through a good environmental management plan.

   d) In view of the implementation of appropriate management and mitigation measures as detailed in report, the sand mining projects have the potential to be associated with significant positive impacts on the River system.

**Follow up action**

   a) Eskom to follow up with DEA and LEDET regarding their decision on remedial action to address past or avoid future environmental impacts – **July 10, 2016.**

   b) Eskom to ensure that any future sand requirements of the project will be obtained from only licensed sand miners.

   c) Facilitate ECO and EMC to communicate DEA’s decision to various affected parties - **July 20, 2016.**

7. **Water supply arrangements for Medupi.** The mission confirmed that Phase 1 of the Mokolo Crocodile Water Augmentation Project (MCWAP Phase 1) is fully operational to deliver 30.5 million m$^3$/year, which is sufficient to meet the requirements of at least three of Medupi’s Flue Gas Desulphurization (FGD) units. The mission expressed concerns with continued delays in finalizing financing and construction plan for the MCWAP Phase 2. The mission was informed that MCWAP – Phase 2 is now about 2 years behind schedule, and is now only expected to deliver water only by November 2022. The mission realizes that this revised schedule, while still on time for the remaining three FGD units that are planned to be operational by June 2023, provides no flexibility for any further delays. The mission also noted that the final agreed capacity (100 million cubic meter per year) of MCWAP Phase 2, will require more financial resources and is strongly contingent upon securing funding in time; agreement with future off-takers; completion of the necessary environment and engineering studies; and environmental authorization from the DEA.
An official confirmation on the Government guarantee, required to underwrite financing (both for social portion and on behalf of Eskom) of the MCWAP Phase 2 investments requirements, is to be followed up with a plan to mobilize resources and monitor progress towards implementation of MCWAP Phase 2.

Follow up action

a. Provide official confirmation of Government Guarantee to underwrite the full financing of MCWAP-Phase 2 - **July 30, 2016.**

b. Provide detailed action plan with time schedule for various milestones - **July 20, 2016.**

8. **Flue gas desulphurization system for Medupi:** The mission noted that Eskom has initiated work targeting commercial operation of each FGD unit from 2021 to 2025 (Units number 6 through 1). The mission also reconfirmed that Eskom has received permission from the DEA, which allows Medupi Power plant to continue complying with the environmental emission limits (as applicable to existing power plants) for SO$_2$ (of 3500 mg/Nm$^3$). For Medupi power plant, the new emission requirement (as applicable to new power plants) for SO$_2$ (500 mg/Nm$^3$) would be effective from 2025 instead of 2020.

9. **Environmental quality monitoring:** Overall, monitoring continues for key parameters, notably air quality, ground and portable water quality, noise and dust fallout. Over the period January to March 2016, data from the Marapong monitoring station indicated that there was only one exceedance of the national sulphur dioxide (SO$_2$) hourly limit. While there are no exceedances of the other national ambient air quality limits for the other pollutants monitored, it is expected that emission of primary pollutants (such as PM$_{2.5}$, SO$_2$ and NOx) may show diurnal peaks during the evening and early morning hours as a result of temperature inversion. These emissions appear to be from low level sources such as domestic combustion (impacting more in winter), motor vehicles, smoldering discarded coal dumps at the Grootegeluk coal mine and the brickworks. It is expected that emissions from tall stacks are expected to have a more significant impact at ground level during the day due to atmospheric turbulence influences.

10. The mission noted relatively higher level of emissions of particulates from Medupi Unit 6 in November 2015 due to failure of baghouses. However, the Unit has subsequently been able to maintain the particulate emission levels below 50 mg/Nm$^3$. While the designing modification (to reduce the temperature stratification and redesign flow distribution) of the bag house are being undertaken for long term control, the unit has adopted a practice of replacing bags when emissions rise. The bags are going to be changed to **PPS (high temperature) bags,** which are currently being manufactured, and will be installed during the outage in September and October 2016. These new bags will reduce the gas volume by not attemperating.

11. **Ground water monitoring:** Data from a majority of the ground water monitoring wells continued to indicate water quality within allowable limits. However, some monitoring wells posted data that was above allowable standards, although the reason for higher levels was not fully known by the time of the mission. This was to be investigated further by Eskom to ascertain cause.
12. **Occupational health and safety:** The plant recorded a fatality of a worker inside the plant, which is reported to be a case of heart failure, not related to site work. Compared to last year, the Medupi project has seen a slight rise in the Lost Time Incidents (LTI) in April 2016 (from 0.16 to 0.18) while continuing to be within the target of 0.20. It is understood that this has been due, in part, to fatigue and routine tasks and to lack of adherence rather than awareness of safety requirements, thus calling for more strict enforcement of safety requirements by contractors. Consequently, the site management has taken several proactive measures to improve awareness on safe working conditions among various contractors’ team.

13. **Regional Environment and Social Assessment (RESA):** The mission noted that key recommendations of RESA report are relevant to guide future coal- Treasury, Eskom and other relevant sectors such as energy to discuss various risks and stresses such based power generation and coal mining operations in the common border region between South Africa and Botswana. Therefore, these findings need to be coordinated among DEA and the national Department of Energy as risk of cumulative air emissions, sustainability of water demand and supply, climate change concerns, alternatives to offset coal-based emissions etc. The Mission recommended that the report should inform the ongoing process of revising the Integrated Resource Plan of 2010. The mission recommended further that there was need to continue with the engagement on the RESA findings and recommendations between South Africa and Botswana, in addition to the national engagement among relevant sectors such as the energy sector.

14. **Environmental offset:** The mission noted that Eskom has launched a major air quality offsets program to improve ambient air quality, as an alternative to emission abatement retrofits in many project areas where there is known poor air quality, in low income areas due to domestic burning practices. The offset program targets reduction of particulate matter, as well as energy efficiency improvement at household level and community levels. The offset intervention include: a stove exchange program for cooking, water heating and space heating; improved ceilings in existing houses in fuel-burning areas; electricity subsidy and LPG subsidy etc. However, with respect to Medupi offset project, Eskom realizes the current level of air quality impact are moderate, therefore requires a phased approach. Eskom proposes to undertake the program over the next year – to raise awareness; engage with households and conduct baseline assessment of air quality impacts in selected areas of Lephalale municipal areas.