

**INDEPENDENT REVIEW MECHANISM
AFRICAN DEVELOPMENT BANK GROUP**



Compliance Review

Medupi Power Project

Country: Republic of South Africa

Compliance Review Request No.: RQ2010/2

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REPORT PREPARED BY THE INDEPENDENT REVIEW MECHANISM

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ACRONYMS

AfDB	African Development Bank Group
CDM	Clean Development Mechanism
CEIF	Clean Energy Investment Framework
CRMA	Climate Risk Management and Adaptation Strategy
CRMU	Compliance Review and Mediation Unit
CTF	Clean Technology Fund
DEA	South African Department of Environmental Affairs
DWA	South African Department of Water Affairs
ECSIA	Environment, Climate, and Social Impact Assessment
EIA	Environmental Impact Assessment
ESA	Environmental and Social Assessment
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
EUR	Euros
FGD	Flue Gas Desulfurization
GHC	Greenhouse Gas
Hg	Mercury
IPCC	Inter-Government Panel on Climate Change
IWRMP	Integrated Water Resource Management Policy
MCWAP	Mokolo-Crocodile Water Augmentation Project
MYPD	Multi Year Price Determination
NERSA	National Energy Regulator of South Africa
NO _x	Nitrous Oxide/Nitrogen Dioxide
RISP	Southern Africa Regional Integration Strategy Paper
RMC	Regional Member Country
SO ₂	Sulphur Dioxide
PAR	Project Appraisal Report
PM10	Particulate matter including Dust
ZAR	South African Rand

I. EXECUTIVE SUMMARY

The objective of this Report is to review the compliance of the Bank with its policies and procedures in the Medupi Power Project. The specific request for such a review was submitted by two South African nationals who asked that their identities be kept confidential throughout the investigations and the outcome thereof (hereinafter the “Requestors”). This confidentiality request was granted by the Director of CRMU, after verifying the credentials of the Requesters. On 15 July 2011, the Boards of the Bank authorized the Panel to review four of the six instances of non-compliance that were alleged by the Requestors. The review was conducted by the Panel of Experts of the Independent Review Mechanism (the Panel) pursuant to the Operating Rules and Procedures of the Independent Review Mechanism adopted 16 June 2010.

The Medupi Power Project consists of the construction of a 4,764 MW coal-fired base load power plant in Lephalale, Limpopo Province, South Africa. The Boards of Directors of the Bank Group approved a loan, not to exceed the aggregate sum of EUR 930 million and ZAR 10.63 billion, for the supply and installation of six boilers and turbo-generators for the project on 25 November 2009, which was after the contracts for these items were concluded. According to the Project Appraisal Report (PAR), the total cost of the project was estimated at EUR 11.19 billion (UA 10.18 billion).

The findings of the review follow. For the sake of clarity, two of the four issues reviewed, which relate to climate change and the environmental aspects of the Project, have been discussed together in the report.

A. Climate Change and Related Environmental Issues

Request and Management Response

With regard to climate change, the Requesters’ concerns relate to (a) the Bank’s compliance with the promotion of a “clean sustainable energy sector,” (b) adequacy of the social and environmental studies done regarding the assessment of cumulative impacts; and (c) the linkages between this project and the Bank’s and Borrower’s approaches to climate change.

The Bank’s Management notes that Bank does not have a corporate policy that seeks to replace support to power generation through conventional fossil-fuel based sources with clean and renewable energy solutions. Instead, it has endorsed a clean energy investment framework aimed at increasing overall energy access in the African Continent while at the same time trying to shift the balance in favour of clean energy, and low carbon development options, given the Continent’s vast renewable resources including hydro-potential, geothermal, wind and solar. It further argues that by financing the Medupi project, the Bank acted consistently with this framework.

Discussion and Findings

The Panel determined that the Bank's policies on energy and environmental assessments -- **1994 Energy Sector Policy, Environmental and Social Assessment Procedures for African Development Bank Public Sector Operations (2001); Environmental Assessment Guidelines; and Policy on the Environment (2004)** -- are applicable to these issues in a Category 1 project like Medupi.

Clean Energy

The connection between energy and climate change has been stated in numerous Bank documents. The Policy on the Environment is clearly applicable to a Category 1 project, such as a large coal-fired power plant. In these cases, the Policy on Environment becomes a key factor in measuring staff and Management compliance with all the policies applicable to the Bank's engagement in an energy project. It is for this reason that the Policy on the Environment, stipulates, as noted above, that Management should engage in "close supervision." On the other hand and despite the Bank's growing commitment to promoting clean energy, its **Energy Sector Policy** is designed to facilitate the Bank engaging in new carbon-intensive energy generating projects, like Medupi, in its member countries. The resulting tension between the energy supply goals and the environmental policies of the Bank means that the Bank is only able to partially comply with all the requirements of all the applicable policies in a complex energy project, like Medupi. **The Panel therefore finds that the Management failed to fully comply with the applicable environmental and energy policies of the Bank.**

Cumulative Impacts

Medupi is the second power plant in the Lephalale area, with potentially more plants, and coal projects, to come. The **Bank's Strategic Impact Assessment Guidelines** indicate that the project appraisal should have included a cumulative impact assessment of multiple projects in an area. In the case of Medupi, no such cumulative assessment was undertaken. The Panel finds that **the Bank complied with the letter of the applicable policies on Environmental Impact Assessments. However, it chose to avoid an invitation in the policy to undertake a more thorough approach that would have recognized the regional and trans-border effects of the Medupi loan on overall environmental loads.**

Climate Change

The Appraisal Report presented to the Boards in November 2009 had only one page in the main volume about climate change, stating that South Africa was already the 11th largest emitter of greenhouse gases in the world, and was likely to become worse as a result of Medupi and other coal-fired power stations. The discussion in the Technical Annexes of the ESIA itemizing environmental impacts failed to mention climate change although a separate section of the Annexes had a discussion of the climate change dimensions of Medupi, without any reference to the applicable Bank policies or strategy

papers such as the **Climate Risk Mitigation and Adaptation Strategy (2009)** (CRMA). Thus, neither the Appraisal Report nor its Annexes describe any steps that the Bank had taken to ensure that this complicated coal-fired project was compliant with the full range of applicable Bank policies. The Panel finds that **the Bank failed to comply with all applicable policies and strategies in regard to the climate change issue. The criteria of the CRMA were never cited in the documentation with analysis of the project, despite the Bank's obligation to "mainstream" the CRMA in all operations.**

B. Local Environmental Issues Related to Air and Water

The requesters complained that "communities living near the Medupi plant will bear the burden of hidden costs in terms of health impacts from air pollution, elevated sulfur-dioxide (SO₂) levels, and mercury residues in their water, air and land; constrained access to water; and livelihood impacts from degradation of land and water in the largely agrarian area."

Rather than responding at a general level, Management chose to take each element identified by the Requesters and respond in detail. The Panel findings following the Management approach.

Air Pollution

Bank Management, based on the Environmental and Social Impact Assessment (ESIA) for the Medupi project, indicates that the major potential impacts of the project on environmental quality and health may arise from the emissions of Sulphur Dioxide (SO₂), Nitrous Oxide (NO) and Nitrogen Dioxide (NO₂) and particulate matter, including dust (PM10). The Management notes that new technologies to control emissions in order to mitigate the likely impacts on environmental quality are expected to be installed after Medupi has been operational for a few years in the Medupi project.

The Bank policies applicable to this issue are: **Policy on the Environment (2004); Environmental and Social Auditing Guidelines (2000)**, and **Environmental and Social Assessment Procedures for the African Development Bank's Public Sector Operations**.

Discussion and Finding

There are two aspects to reviewing policy compliance with regard to local and immediate environmental issues: the environmental disruptions during the construction phase, and the long-term impacts of the operation of the power plant. The Bank needs to assess compliance in each phase of the project.

The Panel notes that it is not clear if the new technology intended to mitigate air pollution, Flue Gas Desulphurization, will in fact be installed because of uncertainties relating to the adequacy of the water supply to this water-intensive technology and to management of the waste, primarily gypsum, produced by the technology.

The Panel's findings are focused on each potential source of air pollution. It finds in regard to SO₂ emissions that the **Bank has complied with the applicable policies and procedures with regard to the analysis included in the PAR and related environmental analysis.** The real test of compliance on this issue, however, is not during the construction phase – rather, the Bank will have to ensure follow-up supervision during the operational phase when the issue of FGD scrubbers will have to be addressed.

It finds in regard to nitrogen oxides that **the Bank Management and staff complied with the Policies on climate change, environmental monitoring, and greenhouse gases that are applicable to the issue of NO_x emissions.**

The Panel finds, on the issue of mercury emissions that **the Bank Management and staff complied with the Policies on climate change, environmental monitoring, and greenhouse gases that are applicable to the issue of mercury emissions.**

Water Access

The Requestors raise concerns about constrained access to water from operation of the power plant. The Management acknowledges that there will be increased demands for water in the area, in addition to the demands generated by this project, and is satisfied that this issue has been addressed-- the borrower expects to meet its water needs from two planned water projects and the boreholes the borrower should develop.

The Bank has two key policies applicable to this sector: the **Policy on the Environment (2004)** and the **Integrated Water Resource Management Policy (2000) (IWRMP).**

Discussion and Finding

The water management issues create significant challenges for the success of the project. There is already a negative balance (use over availability) in water and current planned usages will exacerbate this situation by 2015. The situation could be further aggravated both by natural causes (climate change and declining river flow) and by manmade causes (a decision to install wet scrubbers in the Medupi project to control SO₂). The latter eventuality would more than double the water needs for the Medupi plant. Given this situation, it is significant that DWA has not yet decided to proceed with one of the two planned water projects, the Mokolo-Crocodile Water Augmentation Project

The Panel finds that **the Bank is not in compliance with all applicable policies. It failed to explain in the PAR how it complied with the Integrated Water Resource Management Policy in its appraisal of the project. In addition, the Loan documentation lacks sufficient specificity to ensure compliance with Bank policies. The only reference to the water issue in the Loan Document is a requirement for the Borrower to show a permit for the two phases of water allocation from the DWA, and that condition has not been fulfilled.**

Land and Water Degradation

The Management contends that the Project will not have significant impacts on the quality of the land and water in the project area. It also maintains that there should be no major impacts on ground water quality.

The Bank policy applicable to this issue is the **Policy on the Environment**.

Discussion and Finding

Land and water degradation can take many forms in such a project. While is designed to be minimally liquid and a lining will be installed between the Medupi ash dump and soil, there remains the risk that the ash dump could leach into the ground and contaminate the local water supply. The EIA classifies this possibility as a “high risk” on this project. In addition, the FGD technology, if installed, generates two major waste streams. It generates waste water that can only partially be recycled; the remainder has to go somewhere. It also produces large quantities of gypsum that cannot be absorbed by the gypsum market in southern Africa. Disposal of gypsum on the site around Medupi can by itself create serious fluoride pollution.

The Panel finds that the evidence of water and land degradation, if it occurs, will not be clear until the power plant is operational. **Consequently, it is not possible to reach a firm conclusion about Bank compliance with the applicable policies before Medupi becomes operational.** The role of Bank supervision missions at that time will be crucial for ensuring the compliance of the project with Bank policies.

C. Consultation with the Community and Cultural Rights

The Requesters state that “the Bank failed to consider community consultations and participation processes in the assessment of the project, and that local communities, who live close to the power plant were subjected to removals and the desecration of ancestral graves, which they say demonstrated a gross violation of their cultural and human rights.”

The Management states that the extensive community consultations conducted during the environmental and social impacts assessment process were in line with South Africa’s law and the Bank’s requirements.

The Bank policies applicable to this issue are: the **Environmental and Social Assessment Procedures for African Development Bank’s Public Sector Operations** (June 2001); **Policy on the Environment** (February 2004); **Involuntary Resettlement Policy** (November 2003); **Handbook on Stakeholder Consultation and Participation in ADB Operations** (2001); and the **Gender Policy** (2001).

Discussion and Finding

It is clear from the EIA that an extensive effort to engage in public consultations was made by the borrower. Nevertheless, it is striking that all the members of the community whom the Experts met at the project site, including community leaders, raised lack of consultation as one of their primary concerns about the project. The assertions of lack of knowledge about the consultations were most emphatic in the case of the representatives of the Maropong community and of the traditional leadership in the project area. These communities include the poorest and most disadvantaged people in the project area. This discrepancy in descriptions about the borrower's efforts at public participation raise important questions both about the methods used by the borrower to engage in public participation and about how representative of community views the consultations actually were. In this regard, the Panel notes that neither the languages of the medium used to inform people about the public consultations (English and Afrikaans language newspapers) nor the languages of the written submissions (English and Afrikaans) are the languages spoken by the majority of people in the area.

The Panel finds that the Bank staff's appraisal of the consultation efforts did not comply with the Bank's policies' requirement to ensure that the efforts at public consultation incorporated all affected populations groups, particularly the poor and the marginalized. In particular, the Bank staff failed to comply with the Bank's Policies on the Environment, Involuntary Resettlement, and Gender; and the Environmental and Social Assessment Procedures for African Development Bank Public Sector Projects. They also did not follow the procedures for assessing consultation stipulated in the Handbook on Stakeholder Consultation and Participation in ADB Operations. The Bank's failure to comply with the applicable policies is particularly noteworthy in this case. As indicated above, the deficiencies of these consultations were clear from a careful reading of the ESIA and its annexes. The consequences of the Bank's failure to comply with its own policies and procedures in regard to consultation is that it may have under-estimated the full range of the adverse social impacts of the project, particularly its impacts on poor and vulnerable population groups. Given the complex legacy issues in South Africa, this is a significant oversight.

Graves

The Requestors contend that, while there may only be two "formal" grave sites in the project area, there are likely to be unmarked graves scattered over the project area. They base this contention on the fact that the local communities are poor and, over generations, have been forced to move around the area. They contend that better consultations could have mitigated this risk.

Management maintains that there are only two graves in the project site, both of which the borrower dealt with appropriately.

The Bank policy applicable to this issue is the **Involuntary Resettlement Policy** (2003).

Discussion and Finding

The Resettlement Policy requires the Bank staff to pay careful attention to the needs of disadvantaged groups, particularly the poor and female headed households who may not have formal title to land but may attach a special significance to particular pieces of land. This requirement is particularly pertinent in this case because of the history of the region and of forced relocations in South Africa. In fact, the Experts were informed that the culture of the local communities accepts that people can become separated from the physical location of the graves of their ancestors and allows for the possibility of a symbolic relocation of the ancestor's graves. Unfortunately, there is nothing in the record to indicate that the borrower engaged in consultations with the local community about either the existence of symbolic graves or land claims. Similarly there is nothing to indicate that the Bank staff, in their evaluation of the project made any effort to assess these issues and so to ensure that the project was fully compliant with the relevant policy.

The Panel finds **that the Bank was not sufficiently rigorous in its assessment of this policy to determine either that no graves that had been or could have been desecrated by the Medupi project or that the borrower had established adequate procedures to consult with the community about the existence of either physical or culturally significant gravesites that were vulnerable to desecration by the project. As a result the Panel finds that the Bank has failed to comply with the applicable policy in regard to this issue.** Moreover, it notes that the Bank cannot be sure that it has avoided the risk of being inadvertently complicit in depriving the local community of their historical lands without further consultations with the local communities.

Recommendations

1. An environmental specialist should be included in all future supervision missions to ensure progress on safeguard measures not yet completed at the time construction began. Such participation is needed to ensure that the commitments made in the Technical Annexes to the Appraisal Report are met and should involve more than checking boxes on compliance with DEA permits. Further, consideration should be given to including other staff, for instance, from the Departments in charge of climate change in the supervision missions who can bring a focus on that issue to the dialogue with the borrower.
2. The Bank should complete expeditiously the revisions of the Energy Sector Policy, keeping intact the current draft language that "The Bank will integrate energy dimensions in relevant sector policies, strategies and operations." The Bank also needs to ensure that its energy policy is consistent with its existing environmental policies and related policies at its partner multilateral development banks.
3. Management needs to include in its supervision, close monitoring of economic, social and environmental changes in the air and water quality regions around Medupi to ensure that (1) the results of follow-up studies and outreach exercises such as the EMP are fully incorporated into the criteria for monitoring, and (2)

- initial compliance is not eroded by measures beyond the immediate purview of the power project.
4. Management should carry out the steps described in the CRMA to ensure strong monitoring of the project: (1) all reports of supervision missions should report on progress in achieving progress on climate change; and (2) monitor country level outcomes as relates to climate change resilience. On the latter issue, special attention should be given in reports on water status in the region important to Medupi.
 5. The CRMA states that the Bank will be replacing the Environment and Social Impact Assessment (ESIA) guidelines with a new more comprehensive Environment, Climate, and Social Impact Assessment (ECSIA) to be able to take climate considerations more fully into account. Now, more than two years later, Management is still drafting an approved ECSIA framework and needs to go through a public consultation phase. The Bank should complete and issue the ECSIA framework expeditiously.
 6. The Bank needs to pay close attention, during upcoming supervision missions, to the question of how Eskom, DEA and DWA resolve the water availability issue and decide on the ultimate installation schedule for the flue gas desulfurization units. That is an explicit condition of the financing agreements with the African Development Bank.
 7. The Bank should review the pending Environmental Management Plans, particularly for the operational phase, to ensure that the emission monitoring plans reflect the latest findings with regard to mercury, and if necessary, bolster the tracking of such emissions that source from Medupi, and on a cumulative basis for the Waterberg region.
 8. The Bank should ensure that there is adequate participation by appropriately qualified technical experts in future supervisory and monitoring missions to conduct discussions with appropriate counterparts on the water availability issue. It is important to note that this issue must be resolved by early 2012 if Eskom is to meet the deadlines for installing their SO₂ scrubbers.
 9. The Bank should ensure that there is adequate participation by appropriately qualified technical experts in future supervisory and monitoring missions to conduct discussions with appropriate counterparts on the evolving Environmental Management Plans. The current plans (both construction and operations) are in the process of revision. There is no evidence that they have been reviewed by Bank staff.
 10. The Bank, not having had an opportunity to conduct a timely review of the initial EMP, should use the opportunity created by the drafting of a revised EMP to fully assess the compliance of the many water, air, and land issues treated by the Plan with the requirements in the applicable Bank policies. Equal attention should be paid by Bank staff to the pending operational EMP that is currently under review in Eskom and DEA. Many issues come under the heading of resource degradation, and the most effective Bank tool to address them is the Environmental Management Plan. For that reason the EMP plays an important role in the Bank's Environmental Policy. The borrower has informed the Panel

that a new construction EMP has been put through processing, including approval by the DEA.

11. The IRM recommends that the Boards require Bank Management and staff to undertake the following actions in order to correct its failure to comply with the applicable Bank policies on consultation:
 - The Bank requires the borrower to ensure that there is adequate representation from all sectors of the affected community on its Environmental Management Committee. The proactive sharing of all environmental information, and particularly monitoring data from air and water sources, with the EMC and the public will ensure that the borrower, all parts of the affected community, and the Bank are informed about all relevant environmental and social impacts and issues related to the project.
 - In all future supervision missions, the Bank staff ensure that they communicate to all relevant sectors of the Lephalale community in a timely and culturally and socially appropriate way that they will be visiting the Lephalale community and invite the community to meet with them to discuss the project or to communicate any information they deem appropriate to the Bank staff. The staff should then include information on their meetings and communications with the local community in all future reports, aide-memoires and other documentation relating to Bank supervision missions.
12. The Panel recommends that the Bank take steps to determine, consistent with the requirements of its own policies on participation and consultation, that either there are no graves that have been or are vulnerable to desecration during the construction and operation of the Medupi project or that appropriate compensatory measures have been taken by the borrower to deal with any graves that have been or could be desecrated in the course of the construction and operation of the project. In addition, the Bank should establish that the affected communities do not have any outstanding historical land claims that could be adversely affected by the Medupi project. The implementation of these actions should be monitored and reported on by the Bank staff who participate in future Bank monitoring missions to this project.

Monitoring the Implementation of Decisions by the Bank's Boards of Directors

The Panel, pursuant to its responsibilities under Paragraph 52(c)(iii), recommends that Dr. Richard Bissell be appointed, together with the Director of CRMU, to conduct the annual reviews of the implementation of the Boards of Directors' decision until such time as the project complies with Bank policies as determined by the Director of the CRMU and Dr. Richard Bissell.

II. COMPLIANCE REVIEW MEDUPI POWER PROJECT

The objective of this Report, as authorized by the Boards of Directors on 15 July 2011, is to review the compliance of the Bank with its policies and procedures in the Medupi power project. This review is conducted pursuant to the Operating Rules and Procedures of the Independent Review Mechanism adopted 16 June 2010.

The specific request for such a review was submitted by two South African nationals who asked that their identities be kept confidential throughout the investigations and the outcome thereof (hereinafter the “Requestors”). This confidentiality request was granted by the Director of CRMU, after verifying the credentials of the Requesters. The Requestors asked the Independent Review Mechanism to investigate possible violations of the Bank Group’s policies and procedures with regard to Medupi Power Project. The Report contains findings and makes recommendations to the Boards of Directors of the African Development Bank Group (hereinafter the “Bank Group”) on the basis of a compliance review of the Medupi Power Project.

The primary purpose of the compliance review is to investigate whether or not the Bank Management and staff complied with all applicable Bank policies and procedures in regard to the issues being investigated by the IRM Panel of Experts (the Panel). In addition, it is to be expected that the Panel’s investigation will help the Bank learn lessons about how to enhance the efficacy of its operations in general and in regard to the Medupi Power Project in particular.

The lessons that can be learned from this compliance review are particularly pertinent owing to two unusual aspects to this loan.

First, the Bank only became directly engaged in Medupi after the design of the project was completed and the implementation phase of the project had begun. Consequently, the Bank was not able to discuss its applicable policies and practices with the borrower at a time when the borrower could easily adjust either its own practices or, if necessary, aspects of the project to ensure compliance with Bank policies and procedures. This situation created significant challenges for Bank Management and staff in regard to ensuring compliance with applicable Bank policies and procedures, which in turn, increases the reputational and operational risks to the Bank associated with such a complicated project. It also underscores the importance of the Management and staff’s compliance with all applicable Bank policies and procedures in their assessment of the project before the decision to lend was taken and in their monitoring of the project after the loan was made.

Second, many of the key decisions affecting the environmental and social impacts of the Medupi power plant – notably those relating to augmented water supplies for the power plant and the installation of flue gas desulfurization units that are designed to reduce the emissions from the power plant -- are postponed until after the plant begins operation.

This postponement adds a level of uncertainty to the project that complicates any efforts to assess the project for compliance with applicable Bank policies and procedures. This aspect of the project also increases the importance of the Management and staff's compliance with all applicable Bank policies and procedures in their assessment of the project and in their monitoring of the project after the loan was made.

The Project

The Medupi Power Project consists of the construction of a coal-fired base load power plant in Lephalale, Limpopo Province, comprising of six units with an installed capacity of 4,764 MW.¹ The power station will be approximately 130 m high and approximately 500 m wide. The required stacks will be approximately 220 m in height. Direct-cooling technology will be applied and hence no cooling towers will be constructed.² Other related infrastructure includes a coal stockpile, conveyor belts, and an ash dump. Transmission lines are also being constructed to integrate the station into the national electricity grid.

The Medupi Power Project was approved by the Boards of Directors of the Bank Group on 25 November 2009 with a loan not exceeding the aggregate sum of EUR 930 million and ZAR 10.63 billion. According to the Project Appraisal Report (PAR), the total cost of the project was estimated at EUR 11.19 billion (UA 10.18 billion). The Bank is co-financing the project in partnership with several Export Credit Agencies (ECA), the World Bank, and Eskom. The AfDB funding is being applied to contracts for the supply and installation of six boilers and turbo-generators³ for which major contracts had been awarded before the AfDB became involved as a lender to the project. The construction of the power plant commenced in May 2008, and the first unit will be commissioned sometime in 2012-2013⁴, and each subsequent unit will be commissioned thereafter at intervals of approximately six months.⁵

The rationale for the project is to ensure “improved reliability of energy supply” in support of the goals set out in the Country Strategy Paper Update 2009 for South Africa (2008-12)⁶ for enhancing socio-economic development. The project is also intended to promote local content and skills development.

III. THE REGULATORY FRAMEWORK FOR COMPLIANCE REVIEW

Paragraph 45 of the IRM Operating Rules and Procedures of 16 June 2010 (hereinafter the “IRM Rules”) states that “IRM Experts shall constitute the Review Panels to conduct

¹ AfDB Project Appraisal Report (PAR), Project Summary – Project overview, p. iv.

² AfDB Environmental and Social Impact Assessment (ESIA) Executive Summary, Section 2.

³ AfDB Project Appraisal Report (PAR), paragraph 2.5.4.

⁴ Recent press reports suggest that the first unit will be commissioned in 2013. See Siseko Njobeni, “Eskom shines but power outlook stays gloomy”, *Business Day*, 24 November 2011

⁵ PAR, Project Summary – Project overview, p. iv.

⁶ PAR, Strategic Thrust and Rationale, p. 1.

compliance reviews...” At the time the Boards of the Bank approved the compliance review of the Medupi project and at all times during the conduct of the compliance review, there were two members on the IRM Roster of Experts. Consequently, the Medupi Review Panel (the Panel) consisted of these two Experts, namely Professor Daniel Bradlow, Chair, and Dr. Richard Bissell. The Compliance Review process itself is governed by Paragraphs 50-59 of the IRM Rules.

In line with the IRM Rules, the Panel of Experts:

- Reviewed all documents relevant to the project along with the Bank’s policies and procedures, and solicited additional oral or written information from, and held meetings with, the Bank, Requestors and other interested parties;
- Interviewed Bank staff and Management knowledgeable about details of the project, both in the appraisal stage and in implementation;
- Conducted a site visit in South Africa, from 16-22 November 2011, during which the Panel of Experts visited the project site, met with different stakeholders in the Medupi Power Project, including the Requestors, members of affected communities, government officials, the project developers, and staff at the Bank’s regional office in South Africa. The purpose of the mission was to collect the information needed to assess the compliance of the project with Bank policies and procedures;
- Consulted with the World Bank’s Inspection Panel, which has received and has investigated a request on similar issues with regard to the Medupi Power Project;
- Prepared this compliance review report, pursuant to paragraph 52 of the IRM Rules which authorizes the IRM Experts to provide its findings and recommendations to the Boards of Directors.

As noted above, that the World Bank Inspection Panel has received a request for investigation of the World Bank’s loan to Medupi that raises similar, but not identical, issues to those raised in the request received by the IRM. In the interests of efficiency, the IRM and the World Bank Inspection Panel, as they had done in the case of the IRM’s investigation of the Bujagali Project, signed a Memorandum of Cooperation that provided for the two parties to share information learned in the course of their respective investigations, subject to suitable safeguards of their respective independence and confidentiality requirements.

IV. SUBJECT MATTER OF THE REQUEST

The Boards of the Bank authorized the Panel to review four of the six instances of non-compliance with the Bank Group's policies, procedures, strategies and rules that were alleged by the Requestors. For ease of presentation and analytical purposes, the Panel has combined the first two concerns into one topic, and thus the report has the three sections.

A. Climate Change and Related Environmental Issues

The concerns raised by the Requesters about the climate change and environmental aspects of the Medupi project relate to (a) the compliance of the Bank with the promotion of a "clean sustainable energy sector," (b) adequacy of the social and environmental studies done regarding the assessment of cumulative impacts; and (c) the linkages between this project and the Bank's and Borrower's approaches to climate change.

Clean Energy Systems

Request and Management Response

The Requestors allege that the AfDB has not complied with its own rules and policies in terms of promoting clean sustainable energy projects, developing a low carbon economy and its responsibility to assist in the long term mitigation measures on climate change. In addition, they allege that the Bank ignored its own rules on promoting a low carbon economy, clean energy, and on encouraging countries to mainstream clean energy options into national development plans and energy planning.

The Bank's Management on its part argues that AfDB does not have a corporate policy that seeks to replace support to power generation through conventional fossil-fuel based sources with clean and renewable energy solutions. Instead, the Bank has endorsed a clean energy investment framework aimed at increasing overall energy access in the African Continent while at the same time trying to shift the balance in favour of clean energy, and low carbon development options, given the Continent's vast renewable resources including hydro-potential, geothermal, wind and solar.⁷ The Management further states that renewable sources of energy are not only best positioned to respond to the access needs of Africa's large rural population but also to provide the necessary scale to avoid reliance on costly small-scale national power systems, which are heavily reliant on expensive fossil fuel-based generation.

The Management further argues that by financing the Eskom Medupi project, the Bank acted consistently with this framework. It points out that the AfDB is supporting South Africa to expand its power supply and energy access through conventional sources and is working with South Africa to diversify its energy mix making use of concessionary

⁷ Management Response, p. 2.

resources like the Clean Technology Fund.⁸ The Management cites, as an example of the latter, the recently submitted application by South Africa under the Green Technology Fund for financing of a 100MW wind farm in the Western Cape and a 100MW Concentrating Solar Power Plant at Upington. The funding was approved in 2011. These efforts by the Bank are based on the **Clean Energy Investment Framework for Africa: Role of the African Development Bank Group (2008)**.

Applicable Policies

While the Bank does not currently have a specific climate change policy, it does have other policies and position papers that establish the Bank's approach to this issue. The Bank's policies on energy and environmental assessments -- **Energy Sector Policy (1994)**, **Environmental and Social Assessment Procedures for African Development Bank Public Sector Operations (2001)**; **Environmental Assessment Guidelines**; and **Policy on the Environment (2004)** -- are applicable to Category 1 projects like Medupi. A number of key provisions of the **Policy on the Environment** need to be considered:

- *Section 5.3.5 on Protecting Global Public Goods.* Over the last decade, a key global good has become the identified and projected impacts of changes in the climate. The Inter-Government Panel on Climate Change has established and continues to monitor the damaging impacts of climate change globally and more specifically for Africa, based on the work of eminent African scientists.⁹
- *Section 5.3.8 on Promoting Sustainable Industry, Mining and Energy Resources* states that the Bank “will give preference to projects that employ low waste industrial technologies and avoid adverse effects on natural resources and the environment, and incorporate energy conservation and energy efficient technologies.”
- *Section 5.3.9* states that the Bank “will promote the use of renewable resources of energy taking into account the fact that wind, solar and geothermal energy constitute suitable complements rather than replacements for large-scale generation, improve access to cleaner technologies to enhance the sustainability of fossil fuel use and to lower GHG emissions to manageable levels, and promote cogeneration processes.”
- *Section 5.3.13 on Institution and Capacity Building* stipulates that the Bank will reinforce this goal “by incorporating formal training activities in environmental management principles in all Bank-funded projects that have potential negative impacts on the environment.”
- *Section 6.29 on Compliance Monitoring and Evaluation* notes that these tasks have become increasingly important: “the Bank will therefore equip itself to carry out close monitoring of its operations and increasingly audit their compliance to loan conditions and ESMPs.” It goes on to say that the Bank “will use its increased supervision missions to monitor key environmental

⁸ Ibid.

⁹ IPCC, Climate Change 2007: Working Group II: Impacts, Adaptation and Vulnerability, Chapter 9: Africa, at http://www.ipcc.ch/publications_and_data/ar4/wg2/en/ch9s9-4-1.html

indicators.... The Environmental and Social Auditing Guidelines will be used to ensure that the terms and condition of project approval are adhered to; to monitor the impacts of development and the effectiveness of mitigation measures; to strengthen EIA applications and mitigation measures; and, to undertake process evaluation to optimize environmental management.”

The **Bank’s Clean Energy Investment Framework (CEIF)**, approved in March 2008, is another Boards-approved document applicable to this issue. It calls for priority action by Management and staff in:

- Mainstreaming of clean energy options;
- Promoting investments in energy access and cleaner energies;
- Playing a catalytic role in resource mobilization.¹⁰

Overall the CEIF has a thematic priority of “increasing access to clean energy.”¹¹ By that, the Framework appears to mean that solutions are needed for “meeting the basic energy needs of the poorer communities.”¹² More specifically, according to the Framework, these solutions include rural electrification, decentralized energy development, reversing deforestation, developing sustainable biofuels, switching to renewable and low-carbon energy sources, and upgrading to clean technologies, among others. The CEIF also has ambitious language and strong instruction on financing clean energy: “It is absolutely important that African countries and African institutions – such as the AfDB – develop the necessary capabilities to formulate, package, and market clean energy projects and programs that meet CDM [Clean Development Mechanism] standards.”¹³

Discussion

The connection between energy and climate change has been stated in numerous Bank documents. In particular, the Policy on the Environment stipulates that energy is a critical factor in achieving its objectives, as is indicated by the various Policy provisions listed above. Thus, the Policy on the Environment is clearly applicable to a Category 1 project, such as a large coal-fired power plant in South Africa. As noted in the Appraisal Report Technical Annexes, South Africa has the 8th largest per capita emissions of CO₂ in the world, and 70% of its emissions come from the energy sector.¹⁴ In this case, where the potential damage to the environment is so significant, the Policy on Environment becomes a key factor in measuring staff and Management compliance with all the policies applicable to the Bank’s engagement in an energy project. It is for this reason that the Policy on the Environment, stipulates, as noted above, that Management should engage in “close supervision.” Yet none of the supervision missions before the most

¹⁰ AfDB, *Proposals for a Clean Energy Investment Framework for Africa: Role of the African Development Bank Group, Final Version*. 19 March 2008, p. 16.

¹¹ Ibid., page 10.

¹² Ibid., page 9.

¹³ Ibid., section 3.3.3, at page 12.

¹⁴ AfDB, *Medupi Appraisal Report, Technical Annexes, section 8.6.1*.

recent October 2011 delegation had an environmental specialist on the team, despite the commitment made in the Appraisal Report Technical Annexes.¹⁵ The inclusion of the environmental specialist in the October 2011 supervision mission was a constructive development.

The Bank's growing commitment to promoting clean energy is also shown in two other developments at the Bank that are relevant to Medupi. First, the Bank, whose current policy on energy, **1994 Energy Sector Policy**, is old and does not adequately deal with the new challenges of clean energy and climate change, is committed to updating the Energy Sector Policy. In fact, this policy is designed to facilitate the Bank engaging in new energy generating projects, like Medupi, in its member countries. In 2011 it issued a draft new energy sector policy for public comment.¹⁶ While that draft policy has not yet been approved, its key principles would represent a change in emphasis for the Bank. They focus on: (1) ensuring energy security and increasing access for all; (2) moving steadily to a cleaner energy path; (3) pro-poor focus; (4) enhanced governance at the national level; (5) innovation to increase financial flows in the African energy sector; (6) integrating aid effectiveness principles; (7) social and environmental responsibility; (8) integrating response to climate change; (9) fostering knowledge transfer; and (10) mainstreaming gender dimensions.¹⁷

Second, the Bank addresses the question of clean energy in the context of the **Southern Africa Regional Integration Strategy Paper, 2011-2015 (RISP)**, considered by the Boards and issued in April 2011, where Focus 1.2 on regional energy development states that "the proposed strategy in the energy sector will promote the development of clean and climate-friendly energy resources."¹⁸ For the use of coal, the Paper sets a high standard, namely, that the clean coal process will be one "through which pollutants resulting from the burning of coal are captured and stored, instead of released as greenhouse gases."¹⁹

Findings

The Medupi Project demonstrates the tensions between the energy supply goals and the environmental policies of the Bank. While the Bank recognizes the urgent need for energy projects in Africa and is keen to assist its Regional Member States satisfy this need, it also recognizes that these projects have potentially serious adverse environmental effects. It has not, however, established a policy that clearly addresses this tension and offers Management and staff guidance on how to deal with it within the context of Bank operations. This results in Management being placed in a difficult situation and, in effect, means that the Bank is only able to partially comply with all the requirements of the applicable policies in a complex energy project, like Medupi. **The Panel therefore finds**

¹⁵ Ibid., section B.9 and Table B.9.1, Supervision Schedule.

¹⁶ <http://www.afdb.org/en/consultations/afdb-groups-energy-sector-policy/>

¹⁷ Ibid., pp. 10-12.

¹⁸ African Development Bank, *Environmental and Social Assessment Procedures for African Development Bank's Public Sector Operations*, June 2001.

that the Management failed to fully comply with the applicable environmental and energy policies of the Bank.

Recommendations

- An environmental specialist should be included in all future supervision missions to ensure progress on safeguard measures not yet completed at the time construction began. Such participation is needed to ensure that the commitments made in the Technical Annexes to the Appraisal Report are met and should involve more than checking boxes on compliance with DEA permits. Further, consideration should be given to including other staff, for instance, from the Departments in charge of climate change in the supervision missions who can bring a focus on that issue to the dialogue with the borrower.
- The Bank should complete expeditiously the revisions of the Energy Sector Policy, keeping intact the current draft language that “The Bank will integrate energy dimensions in relevant sector policies, strategies and operations.”²⁰ The Bank also needs to ensure that its energy policy is consistent with its existing environmental policies and related policies at its partner multilateral development banks.

Cumulative Impacts

Applicable Policies

The **Policy on the Environment (2004)** reflects a growing concern with cumulative impacts. **Section 6.8** calls for the Bank to develop Strategic Environmental Assessments (SEA) that would allow “consideration of more far-ranging and cumulative impacts and broader types of alternatives than provided by a more traditional, project-specific EIA. In addition, an SEA can help facilitate consultations with the public by identifying issues, initiating baseline data collection, and developing action programmes.”

The same idea is elaborated in the **Environmental and Social Assessment Procedures for African Development Bank’s Public Sector Operations paper (2001)**. It provides extensive guidance for staff in the case of large, complex loans with system-wide impacts:

“A sectoral or regional ESA shall be carried out to evaluate the likely environmental and social consequences of a proposed sector-wide or region-wide plan or program. The plan or program may be related to a sector such as water and sanitation, energy, transport, etc. or it might be related to a geographical area or region. The main benefit of a sectoral or regional ESA is that it allows for the consideration of more

²⁰ See fn 19, page 15.

far-ranging and cumulative impacts and broader types of alternatives than provided by a project specific ESA. Sectoral or regional ESAs can facilitate the preparation of project-specific ESAs at later stages of development.

A sectoral ESA focuses on the design or strengthening of an institutional and regulatory framework for carrying out environmental or social responsibilities. It generally assesses the major impacts of concern in the sector as a whole and prescribes standard approaches to project design and mitigation. In so doing it reduces the scope of work for individual project-specific ESAs. A regional ESA on the other hand examines the cumulative effects of multiple activities in a specified region. The activities may be ongoing, planned or anticipated in the future. Regional ESAs help to define priorities and options.”²¹

Discussion

Medupi is the second power plant in the Lephalale area, with potentially more plants to come, and the Bank’s Strategic Impact Assessment Guidelines indicate that the project appraisal should include a cumulative impact assessment of multiple projects in an area. Several specific aspects of this project suggest the value of a cumulative impacts assessment in this case: the expansion of the nearby Grooteegeluk Coal Mine in order to supply coal for the project, the pre-existing emissions from the nearby Matimba power plant, doubling the volume of residual ash to be disposed of, construction of additional transmission lines to population centers, and the additional water requirements for operation of the plant and installation of desulfurization scrubbers. Observers have also pointed to the extensive plans for further power plant development beyond Lephalale throughout the Limpopo region, including the Botswana energy sector plans.

Cumulative impact analysis in most countries suffers in that the EIA “is primarily a permitting instrument and the EIA process results in a permit with conditions for which the applicant is responsible,” and thus “it is very difficult to include detailed assessment of impacts not under the control of the applicant.”²² In the case of Medupi, despite the applicable Bank policies, the involvement of the Bank has not led to correcting this deficiency. Instead the project sponsor and the Bank have relied either on the “Environmental Management Framework” initiative – outlined below for this case – or on *post hoc* directives from the DEA to undertake remedies after damage is detected in the operation of the plant. Neither remedy is fully satisfactory in timing or timeliness owing to their occurring after and outside the EIA. Overall, one can say that the Bank is sensitive to this issue, and is at least experimenting with better approaches that may over time result in improved practice.

²¹ African Development Bank, *Environmental and Social Assessment Procedures for African Development Bank’s Public Sector Operations*, June 2001, p. 3.

²² World Bank, *Safeguards Diagnostic Review for South Africa Eskom Investment Support Project*, March 11, 2010, p. 31.

An example of the need for a cumulative impact assessment in this case is the finding by the South African DEA that ambient SO₂ emissions from the existing Matimba Power Station have already episodically exceeded the recommended local and international air quality limits. Therefore, residents have a concern about the likely elevated levels of particularly SO₂ and other pollutants, such as mercury emissions, and their likely negative health impacts and damage to the environment. DEA has also pointed out that the region around Medupi is almost certain to be an industrial growth zone over the coming decades and the foreseeable cumulative impacts necessitate greater preemptive analysis and actions.

It is noteworthy that the Bank has now indicated modest concern about cumulative impacts by joining the World Bank in sponsoring a study of regional impacts of pending energy projects on the Botswana-South Africa border.²³ Given current plans for coal powered plants in both countries, the report estimates that there will be more than 17,000 MW in a sub-region 150 miles each side of the two countries' borders. As the report states, it is unlikely individual EIAs will be able to fully analyze the cumulative impact of such a surge in coal for power purposes.²⁴ This study, unfortunately, will only be undertaken in the midst of major project-funding decisions and at a time of apparently urgent power shortages.

It is important to note that the issues of cumulative impacts has also been partially addressed in the DEA-initiated spatial development framework. This approach to the problem of cumulative impacts was endorsed in the 2008 study of EIAs, as a key integrative step in avoiding "unnecessary impacts at especially local level as they should discourage applications in areas that are not suitable for such applications."²⁵ In this case, the DEA took the initiative to launch a seminal report on the development of the Waterberg District, in partnership with the Limpopo Department of Economic Development, Environment and Tourism and the Waterberg District Municipality.²⁶ This report highlighted the scarcity of water as the most important constraint on development of the region and that there is overwhelming concern throughout the district over breakdown of infrastructure.²⁷ The roles played by Medupi and its related large-scale requirements thus increase anxiety in the community about the potential deterioration in the environment.

²³ SE Solutions (Pty) Ltd, *Regional Environmental and Social Assessment of Coal-Based Energy Projects along the Botswana-South Africa Border: Phase 1 – Preliminary Analysis of Cumulative Impacts and Preparation of Terms of Reference for a Detailed Study*. Pretoria, October 2010.

²⁴ Ibid., p. 6

²⁵ Mosakong Management, *Review the Effectiveness and Efficiency of the Environmental Impact Assessment (EIA) System in South Africa*, 20 November 2008, p. xxiii.

²⁶ Environomics, *Environmental Management Framework for the Waterberg District: Draft Environmental Management Framework Report*, October 2010.

²⁷ Ibid., p. 59-61.

Findings

The Bank complied with the letter of the applicable policies on Environmental Impact Assessments. However, it chose to avoid an invitation in the policy to undertake a more thorough approach that would have recognized the regional and trans-border effects of the Medupi loan on overall environmental loads.

Recommendation

- Management needs to include, in its supervision, close monitoring of economic, social and environmental changes in the air and water quality regions around Medupi to ensure that (1) the results of follow-up studies and outreach exercises such as the EMP are fully incorporated into the criteria for monitoring, and (2) initial compliance is not eroded by measures beyond the immediate purview of the power project.

Climate Change

Request and Management Response

The Requestors are concerned about the impact of the loan on South Africa's carbon reduction commitments, the scaling-up of investments in renewable energy technologies, and the efforts to deal effectively with the threats of climate change. They further state that "a loan-request on renewable energy projects would be most appropriate and beneficial, instead of supporting dirty, polluting coal-fired plants which will increase SA's already high carbon emissions per capita."

The Bank's Management on its part contends that South Africa's carbon reduction commitments and scaling up of investments on renewable energy will not be affected by investing in the Medupi power station. It argues that the government of South Africa has an Investment Plan that includes seeking financial support from the Clean Technology Fund (CTF) to upscale investment in renewable energy technologies. The Clean Technology Fund resources will be used to support the Government's specific goals of generating 4% of the country's electricity requirements from renewable energy by 2013; improving energy efficiency by 12% by 2015; and, modal and technology shifts in transport including shift from private to public modes for passengers, shifts from road to rail for freight, and introduction of clean passenger vehicles such as electric vehicles.²⁸

The Management further states that given South Africa's expected economic growth at the rate of 4% per annum, renewable energy sources are insufficient to meet the forecasted demand for electricity in the next 20 years. Therefore, coal-fired options are still required for expansion during this period, and that Eskom need to establish 1500

²⁸ Management Response, p. 3.

MW of electricity generation per year. The 200MW from wind and solar plant cannot be substitutes for the Medupi power plant, given the projected energy needs.²⁹

Moreover, the Management argues that the project will use an advanced technology which will raise the efficiency of the power generated from coal from 36% to 40%. This technology also has environmental benefits by reducing greenhouse gases compared to conventional coal-fired power plants. In addition, the plant will use dry cooling technology which uses less water compared to wet cooled technology, and thus it is suitable for South Africa.³⁰

Applicable Policies

The Boards discussed and adopted the paper, “**Bank Group Climate Risk Management and Adaptation Strategy**” (CRMA) in March 2009. The commitments in this Bank paper are extensive, e.g.:

- “Climate-proofing investments will include actions to ensure that development efforts are protected from negative impacts of climate change, climate variability, and extreme weather events and to ensure that climate-friendly development strategies are pursued to delay and reduce damages caused by climate change.” (para 3)
- “Task managers in each Operations Complex department will carry out a quick screening of project and programme proposals using computer based tools to identify country, region and sector, specific climate risks during project design.” (para 4)

The Bank’s policies on environmental assessments -- **Environmental and Social Assessment Procedures for African Development Bank Public Sector Operations (2001); Environmental Assessment Guidelines; and Policy on the Environment (2004)** -- are also relevant to climate change. Key provisions of the **2004 Policy on the Environment** are:

- *Section 5.3.5 on Protecting Global Public Goods.* Over the last decade, a key global good has become the identified and projected impacts of changes in the climate. The Inter-Government Panel on Climate Change has established and continues to monitor the damaging impacts of climate change globally and more specifically for Africa, based on the work of eminent African scientists.³¹
- *Section 5.3.8 on Promoting Sustainable Industry, Mining and Energy Resources.* It states that the Bank “will give preference to projects that employ low waste industrial technologies and avoid adverse effects on natural resources and the environment, and incorporate energy conservation and energy efficient technologies.

²⁹ Ibid.

³⁰ Ibid.

³¹ IPCC, Climate Change 2007: Working Group II: Impacts, Adaptation and Vulnerability, Chapter 9: Africa, at http://www.ipcc.ch/publications_and_data/ar4/wg2/en/ch9s9-4-1.html

- *Section 5.3.9* states that the Bank “will promote the use of renewable resources of energy taking into account the fact that wind, solar and geothermal energy constitute suitable complements rather than replacements for large-scale generation, improve access to cleaner technologies to enhance the sustainability of fossil fuel use and to lower GHG emissions to manageable levels, and promote cogeneration processes.”
- *Section 5.3.13 on Institution and Capacity Building.* The Bank will reinforce this goal “by incorporating formal training activities in environmental management principles in all Bank-funded projects that have potential negative impacts on the environment.”

The **Bank’s Clean Energy Investment Framework (CEIF)**, approved in March 2008, is also a Boards-approved document applicable to this issue. It calls for priority action by Management and staff in:

- Mainstreaming of clean energy options;
- Promoting investments in energy access and cleaner energies;
- Playing a catalytic role in resource mobilization.³²

Discussion

The Appraisal Report presented to the Boards in November 2009 had only one page in the main volume about climate change, stating that South Africa was already the 11th largest emitter of greenhouse gases in the world, and likely to become worse as a result of Medupi and other coal-fired power stations. The Technical Annexes did not represent an appropriate application of the Bank policies. Their discussion of the ESIA itemizing environmental impacts failed to mention climate change.³³ A separate section of the Annexes had a discussion of the climate change dimensions of Medupi, without any reference to the applicable Bank policies or strategy papers such as the CRMA.³⁴ Instead the analysis focused on the current large-scale emissions by South Africa, and then moved directly to the solar and wind investments envisioned in partnership with the World Bank. Thus, neither the Appraisal Report nor its Annexes describe any steps that the Bank had taken to ensure that this complicated coal-fired project was compliant with the full range of applicable Bank policies.

The failure to address the CRMA in the Appraisal Report is noteworthy because of the obvious climate change implications of the Medupi project. The stated purposes of the CRMA (approved by the Boards on 29 April 2009) are two-fold: (1) to reduce vulnerability within the RMCs to climate variability and promote climate resilience in past and future Bank-financed development investments; and (2) to build capacity and knowledge within the RMCs to address the challenges of climate change. Among the various tools laid out in the CRMA, the first is most relevant to the Medupi project:

³² AfDB, *Proposals for a Clean Energy Investment Framework for Africa: Role of the African Development Bank Group, Final Version*. 19 March 2008, p. 16.

³³ Medupi Appraisal Report, Technical Annexes, Section 8.2.1.

³⁴ Medupi Appraisal Report, Technical Annexes, Section B8.6.

“Climate proofing investments” in a way that will “ensure that development efforts are protected from negative impacts of climate change, climate variability, and extreme weather events and to ensure that climate-friendly development strategies are pursued to delay and reduce damages caused by climate change.”³⁵ The strategy paper goes on to say that “the implementation of the Bank’s CRMA will be mainstreamed in all aspects of operations.” In this regard, it is unfortunate, for example, that, with regard to specific “climate proofing” of the project, the Appraisal Report never discussed the possibility of significant climate change-related reductions in precipitation in the region of Medupi, which could have a major impact on the Medupi plant, its anti-pollution components and associated facilities.

However, the fact that the Bank has approved two high-profile investments in wind and solar energy, in vague association with Medupi, is a positive development, and points the way to beginning implementation of the Bank strategy paper.

The CRMA also calls for regional integration of the issue. As stated in paragraph 3.1.3, “climate change and variability is a regional phenomenon and negative impacts can severely affect several countries in the region. As such, climate risk management and adaptation will require extensive cross-country collaboration and monitoring in the interest of protecting both global and regional public goods.” This issue was entirely absent in the presentation of the project to the Boards by Management.

Findings

The Bank failed to comply with all applicable policies in regard to the climate change issue. The criteria of the CRMA were never cited in the documentation with analysis of the project, despite the Bank’s obligation to “mainstream” the CRMA in all operations.

Recommendation

- Management should carry out the steps described in the CRMA to ensure strong monitoring of the project: (1) all reports of supervision missions should report on progress in achieving progress on climate change; and (2) monitor country level outcomes as relates to climate change resilience. On the latter issue, special attention should be given in reports on water status in the region important to Medupi.
- The CRMA states that the Bank will be replacing the Environment and Social Impact Assessment (ESIA) guidelines with a new more comprehensive Environment, Climate, and Social Impact Assessment (ECSIA) to be able to take climate considerations more fully into account. Now, more than two years later, Management is still drafting an approved ECSIA framework and needs to go through a public consultation phase. The Bank should complete and issue the ECSIA framework expeditiously.

³⁵ CRMA, p. vi.

B. Local Environmental Issues Related to Air and Water

Request and Management Response

The requesters complained that “communities living near the Medupi plant will bear the burden of hidden costs in terms of health impacts from air pollution, elevated sulfur-dioxide (SO₂) levels, and mercury residues in their water, air and land; constrained access to water; and livelihood impacts from degradation of land and water in the largely agrarian area.”

This view was expressed not only in the Request but also in both informal conversations with the Panel and in local official documentation. There is a widespread fear that the Matimba power plant is already causing and will continue to cause deteriorating health status throughout the Lephalale area. The local residents expect the Medupi plant to exacerbate the problem. Their fears take two forms – the air and water quality deterioration associated with Medupi and its health implications, particularly on respiratory health, and on HIV/AIDS prevalence. In regard to the latter issue, the most recent Integrated Development Plan for Lephalale municipality (2010-11) stated that “Lephalale has a relatively high-level of infection if compared to other parts of South Africa.”³⁶ This is particularly notable since Limpopo Province has the third lowest level of all of the provinces in South Africa. Most local people attribute the raised Lephalale rate to the presence of mining operations and the large number of immigrant construction workers. Unfortunately, the government does not release HIV rates by municipality and so there is no way to verify or disprove the view of the locals about the damaging impact of facilities such as Matimba and Medupi. Similarly, there is no publicly available information on rates of respiratory illnesses in the Lephalale area.

Rather than responding at a general level, Management chose to take each element identified by the Requesters and respond in detail; those are spelled out below.

Air Pollution

Management Response

Bank Management, based on the Environmental and Social Impact Assessment (ESIA) for the Medupi project, indicates that the major potential impacts of the project on environmental quality and health may arise from the emissions of Sulphur Dioxide (SO₂), Nitrous Oxide (NO) and Nitrogen Dioxide (NO₂) and particulate matter, including dust (PM10), if no abatement controls are applied. The Management response identifies studies involving baseline measurements and simulated predictions that were carried out to assess the combined impact on the immediate environs of both the existing Matimba power plant and the proposed Medupi plant. In addition, different control efficiency of abatement measures were assessed to avoid any significant increment that would pose health risks.³⁷

³⁶ Lephalale Municipality, *Integrated Development Plan Review 2010/2011*, p. 81.

³⁷ Management Response, p. 4.

The Management notes that new technologies to control emissions in order to mitigate the likely impacts on environmental quality have been envisaged and planned for in the Medupi project. It points out that the installation of FGD systems, if it occurs, will result in additional capital expenditure of about 20% and additional operational cost of 10%. It further argues that Eskom is willing and has already developed financing plans for retrofitting technologies which would further control emissions in its existing plants. The ESIA report has also recommended routine monitoring and qualitative risk assessment specific to any control technology that is installed.³⁸

Applicable Policies

The **Policy on the Environment (2004)** includes numerous provisions dealing with point-source pollution possibilities. As a Category 1 project, the overall standard applicable to Medupi requires assessment of any pollution source that is “likely to induce important adverse environmental and/or social impacts that are irreversible, or to significantly affect environmental or social components considered sensitive by the Bank or the borrowing country.” It goes on to say that the environmental assessment “recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts and to enhance environmental and social project benefits.”³⁹ Many of the key procedures required for Bank-financed projects can be gleaned from the **Environmental and Social Audit Guidelines**, as well as the **Environmental and Social Assessment Procedures for the African Development Bank’s Public Sector Operations**.

Discussion

While it is not possible to find data on respiratory illness rates, it is clear that there is substantial air pollution in the rural area around the proposed Medupi plant. A recent inventory of likely sources of pollutants in the area that could aggravate respiratory illnesses was extensive:

- Existing Matimba Power Station and its associated ash dump
- Construction of the Medupi power station
- Grooteegeluk opencast coal mining operations
- Potential veld fires
- Sewage works (Farm Nelsonskop)
- Wind-blown dust from open areas and agricultural activities
- Household fuel combustion
- Vehicle exhaust releases and road dust entrainment along paved and unpaved roads in the area
- Burning of the municipal waste dump
- Cross-boundary pollution from biomass burning and industrial activities.⁴⁰

³⁸ Ibid.

³⁹ Policy on the Environment, para 6.6 at p. 20.

⁴⁰ Gondwana Environmental Solutions, *Air Quality Impact Assessment for the Proposed Eskom General Landfill and a Hazardous Waste Storage Facility in Lephalale*. 2009. Page 31.

This review of policy compliance with regard to local and immediate environmental issues covers two aspects: the dramatic impact of environmental disruptions during the construction phase, and then the long-term impacts of the operation of the power plant. While an outside observer might consider the latter impacts to be ultimately more damaging, experience with compliance assessments demonstrates that the short-term, current impacts from the construction process causes much more intense concern among the people in the affected communities. The Bank needs to assess compliance in each phase of the project.

Because each resource issue has its own characteristics, they are discussed in more detail separately below.

SO₂ emissions

Management Response

Management cites environmental assessments that conclude SO₂ concentrations due to the existing Matimba Power Plant are associated with low to moderate health risks for the neighboring residential areas. The potential for infrequent mild respiratory effects occurring in the Marapong area was classified as “moderate” given that the threshold associated with the potential for such effects was exceeded four times per year in this area which has a population of ~17000 people.⁴¹

The Bank’s Management argues that the proposed plant will use the Flue Gas Desulfurization (FGD) technology which is capable of reduction efficiencies in the range of 50%-98%.⁴² According to the Bank’s Management, the ESIA for the proposed plant indicates that at least 90% control efficiency would be required for the six new units of the Medupi plant (whether commissioned together or in phases), operating coincident with the existing Matimba Power station, to ensure that the magnitude, frequency and spatial extent of SO₂ non-compliance is within levels comparable to those projected for the baseline conditions (i.e. with only the Matimba station operating), and to avoid any significant increment in health risks potentials from the proposed Medupi plant. This control efficiency measure would also reduce potential for corrosion effects and vegetation damage to levels classified as low.⁴³

Discussion

Many aspects of the challenge of limiting SO₂ emissions are based on future conditions, both within the power plant and in associated facilities. For example, the requirement to install flue scrubbers in the DEA permit is based on the possibility that future monitoring may indicate “non-compliance with ambient SO₂ standards.” Under national regulations, the plant can operate for eight years under the 1998 standards, but will then have to

⁴¹ AfDB ESIA Executive Summary, Section 7.

⁴² Management Response, p. 5.

⁴³ Management Response, pp. 4 - 5.

upgrade to meet the new 2009 emissions standards.⁴⁴ Nevertheless, Eskom does not plan to install flue scrubbers until significantly more water is available, which it is expecting to receive from water allocations from the proposed Mokolo-Crocodile Water Augmentation Project (MCWAP) in addition to the expanded drawdown from Mokolo reservoir. This means that the Department of Water Affairs will play a critical role in determining the timing for deployment of these wet scrubbers to meet the South African environmental requirements with regard to SO₂.

Unfortunately, it is not clear that the proposed MCWAP to bring water from the Crocodile West catchment area to the Lephalale region will go ahead. As of December 2011, the Department of Water Affairs had not made a determination to go forward with the MCWAP. The Department was awaiting decisions on the part of other potential industrial users of Crocodile River water before making a commitment. If the DWA does not decide to proceed with the MCWAP by early 2012, Medupi may not receive adequate access to water in time to begin installing the FGD technology by its preferred date in 2019.

The time at which Eskom will need to install the scrubbers will depend on the air monitoring systems required by the DEA in the permit to proceed with the project. The inclusion of such monitoring in both the construction and operational EMPs indicates the importance of the issue from an environmental perspective and thus its relevance to compliance with the applicable Bank policies. .

The people of Marapong, living in the shadow of Matimba and a few kilometers from Medupi, are understandably nervous that the SO₂ emissions are causing the ill health among a population already exhibiting below acceptable health status as a result of their poverty. The lack of good public data on respiratory illness rates in the area exacerbates their concerns. This indicates the need for a credible process for monitoring and reporting SO₂ emissions. It is important to note that Eskom is not trusted by some people in the community to provide honest data, making it even more imperative to bring in the visible “independent party” specified by the DEA permit. Furthermore, Eskom does little on its own to proactively make monitoring data public – saying only that it is available “on request” – when much could be gained by providing publicly understandable summary reports in local languages and local media to educate the public about environmental challenges in their communities on a real-time basis. This suggests that the monitoring process should be undertaken by and be the responsibility of an independent party.

The flue gas desulfurization process faces resource challenges in addition to the issue of water availability. Current technologies for FGD are not environmentally benign. Most importantly, it is a highly resource intensive process. The FGD process requires, in addition to large amounts of water, a systems approach that ensures adequate supplies of

⁴⁴ World Bank, *Safeguards Diagnostic Review for South Africa Eskom Investment Support Project*, March 11, 2010, p. xix.

lime sorbent and effective transport and gypsum disposal systems.⁴⁵ Any one of these would be a stress on the local environment; all three mean that there is a massive regional challenge to meet all aspects of installing and operating FGD units at Medupi.

The fact that SO₂ emissions are likely to be a significant issue in this project is acknowledged by Management. The Executive Summary of the ESIA for Medupi provided to the Boards by Management noted that “local and international air quality limits given for SO₂ were predicted to be exceeded for hourly and daily averaging periods within the zone of maximum impact.”⁴⁶ Indeed, the limits are already exceeded on occasion by the nearby Matimba power station operating alone.⁴⁷ This means that the addition of Medupi will inevitably add to the already high air quality burden. The permit to proceed with construction includes a specific condition: “Eskom shall install, commission and operate any required SO₂ abatement measures that may be necessary to ensure compliance with any applicable emission or ambient air quality standards published in terms of the National Environmental Management Air Quality Act, 2004 (Act No. 39 of 2004)”.⁴⁸ Those standards are spelled out in the National Framework for Air Quality Management (2007). The EIA Executive Summary goes on to say that “control efficiency in excess of 80% would be required for all six units to prevent increments in health risk potentials above baseline conditions.”⁴⁹ Such control efficiency is not currently available, however, despite Management’s optimistic statement that “this plant is FGD ready and has been designed for wet FGD with control efficiencies of more than 90%.”⁵⁰

As noted above, Eskom will not be installing FGD scrubbers soon for a number of reasons: (1) financing is not yet evident for the costs of installation (US\$ 800 million in capital costs) and/or operational costs (+10%); (2) water is not yet clearly available for operation of the scrubbers, which would triple annual use by the Medupi complex, and the diversion of water from other local users could seriously damage the area economy, particularly given its expected future growth; and (3) the disposal method for the resulting gypsum taken from the scrubbers has not been solved and would create a major pollution problem of its own. Some observers note that at least some of the problems cited could be met by declining costs for FGD scrubbers as well as scrubbers that may require less water to achieve the same efficiency.⁵¹ In conversations with Eskom, however, it appears that the company has already chosen to use existing FGD technology, even though installation will not occur until scheduled maintenance would begin a series of sequential shutdowns, six years after the first unit is in operation in 2013.

⁴⁵ Tyrone C. Singleton, *The Decision to Install Flue Gas Desulphurisation on Medupi Power Station: Identification of Environmental Criteria Contributing to the Decision Making Process*, University of Witwatersrand, 2010, page 66.

⁴⁶ AfDB, *Executive Summary of South Africa: Environmental Impact Assessment for the Medupi Power Plant Project of Eskom*, 1 July 2009, p 11.

⁴⁷ See Record of Decision for Project Reference 12/12/20/695, Department of Environmental Affairs and Tourism, 21 September 2006, p. 2.

⁴⁸ Ibid, page 4

⁴⁹ Executive Summary of the EIA, page 12.

⁵⁰ Ibid, page 10.

⁵¹ World Bank, *Safeguard Diagnostics*, p. 64.

The Record of Decision from the government ensures that the site-specific aspects of this issue will remain on the agenda, through regular monitoring by DEA staff of compliance with the conditions of the environmental permit. This does not however change the fact that the installation of the scrubbers cannot occur until Medupi has gained assured access to a secure new water source. The DWA's recent announcement of the "postponement" of the MCWAP, therefore, raises serious concerns about the likelihood of the scrubbers being installed as planned. It has also left the community bewildered about the long-term intentions of the DWA to cooperate with Eskom on this essential infrastructure support, which in itself can undermine social and economic developments in the Lephalale area.

Findings: The Bank has complied with the applicable policies and procedures with regard to the analysis included in the PAR and related environmental analysis. The real test of compliance on this issue, however, is not during the construction phase – rather, the Bank will have to ensure follow-up supervision during the operational phase when the issue of FGD scrubbers will have to be addressed.

Recommendation

- The Bank needs to pay close attention, during upcoming supervision missions, to the question of how Eskom, DEA and DWA resolve the water availability issue and decide on the ultimate installation schedule for the flue gas desulfurization units. That is an explicit condition of the financing agreements with the African Development Bank.⁵²

Nitrogen Oxides

According to the Management, the ESIA report indicates that predicted NO_x concentrations inclusive of cumulative concentrations of emissions from the existing Matimba Power Station would be within the local and international air quality limits for the proposed Medupi power plant.

Discussion

The Record of Decision from the Department of Environmental Affairs and Tourism for this project appropriately raised the question of NO as a greenhouse gas.⁵³ While the projected emissions from Medupi are under current limits, the question of regulating nitrogen as a particularly damaging greenhouse gas (on a weight basis, worse than CO₂) is becoming more prominent.⁵⁴ It is thus appropriate that the DEA requires continuous monitoring of nitrogen oxides in its approval document.

⁵² Loan Agreement between the African Development Bank and Eskom, 11 December 2009, p. 15.

⁵³ Record of Decision, p. 2.

⁵⁴ US Environmental Protection Agency, *DRAFT: Global Anthropogenic Non-CO₂ Greenhouse Gas Emissions, 1990-2030*, Document EPA 430-D-11-003, August 2011.

Finding

The Bank Management and staff complied with the Policies on climate change, environmental monitoring, and greenhouse gases that are applicable to the issue of NO_x emissions. Continuing compliance, however, will involve monitoring both the quality of on-site air measurement systems and potential changes of national/international standards to respond to the climate change implications of large-scale emissions.

Mercury Emissions

According to the Management, the impact assessment predicted that the potential for health risks associated with long-term public exposure to mercury emissions from coincident operations of the existing Matimba and proposed Medupi Power Stations are low even given the potential for multi-pathway exposures. In addition, the Management argues that the application of the control measures for the other pollutants like sulphur dioxide and nitrogen oxide emissions would also control mercury emissions.⁵⁵

Discussion

In the absence of any current controls of SO₂ and NO_x, it should be pointed out that the South African DEA expressed concern in issuing its permit about tracking the mercury emissions from the rapidly escalating use of coal for energy production.⁵⁶ This is not surprising, given the toxic nature of mercury emissions, and the fact that coal-burning power plants are the principal environmental source of such emissions, making it essential to continue to monitor this element. The impaired neurological development that results for fetuses and young children is a particularly tragic byproduct of this form of energy development, South Africa has just begun to address the implications of mercury emissions from coal plants, having been identified in the last decade as the 2nd largest emitter globally (after China).⁵⁷ Researchers have undertaken monitoring of regions that are most likely to be highly impacted by the buildup of methylmercury residuals as they accumulate in water supplies and are then transferred to humans. For this reason alone, the issue should remain on the Bank's agenda for environmental monitoring in relation to Medupi and other power plants in the region.

The Environmental Impact Assessment was drafted and approved before the current round of work was undertaken by the South African Mercury Assessment, and thus did not have the benefit of drawing on important ongoing work to trace the pathways from coal-burning to human health hazards. As has been concluded, "there are still considerable knowledge gaps on the fate and transport of Hg" in South Africa,⁵⁸ and it

⁵⁵ Executive Summary of the EIA, p. 12.

⁵⁶ SE Solutions, op.cit., p. 20.

⁵⁷ Chavon R Walters, Vernon S Somerset, Joy J Leaner, and Jaco M Nel "A Review of Mercury Pollution in South Africa: Current Status" *Journal of Environmental Science and Health, Part A. Toxic / Hazardous Substances and Environmental Engineering.*, 2011 Aug ;46 (10), pp.1129-37

⁵⁸ Ibid.

would be remiss on the part the Bank to assume that the issue has been closed by the EIA.

Finding

The Bank Management and staff complied with the policies on climate change, environmental monitoring, and greenhouse gases that are applicable to the issue of mercury emissions. Nevertheless, the more recent work on mercury emissions and transport by South African researchers warrants special attention by Bank supervision missions so that they receive an update on the incorporation of new research into project oversight.

Recommendation

- The Bank should review the pending Environmental Management Plans, particularly for the operational phase, to ensure that the emission monitoring plans reflect the latest findings with regard to mercury, and if necessary, bolster the tracking of such emissions from Medupi, and on a cumulative basis from the Waterberg region.

Water Access

Requesters and Management Response

The Requestors raise concerns about constrained access to water from operation of the power plant, as well as damage to traditional sources of water in the Mokolo River from allegedly unlawful sand dredging for construction purposes.

Management states that the project falls within the Mogolo River Catchment, which drains into the Limpopo River. Water from this catchment is largely used for agriculture (87%) and the rest by industry, mining, power generation and domestic activities. With the planned development activities in this area by the provincial government, water demand by industry, mining, and power generation will increase.⁵⁹ In order to ensure adequate water for the power plant and water for other users, the loan agreement stipulates that Eskom is required to obtain water permits from the Department of Water Affairs (DWA) for expanded access to water from the Mokolo Dam (Mokolo Dam Phase 1) and the integrated water permit for access to the anticipated Phase 2 of the MCWAP that will transfer water from the Crocodile River to the Steenbokpan-Lephalale corridor. In addition, Eskom should develop boreholes.⁶⁰ On that basis, Management is satisfied that the water availability issue has been addressed.

⁵⁹ Management Response, p. 6.

⁶⁰ Ibid.

Applicable Policies

The Bank has two key policies applicable to this sector: the **Policy on the Environment** (2004) and the **Integrated Water Resource Management Policy** (2000) (IWRMP).

The **IWRMP** requires the Management to ensure that adequate attention is paid to the protection of aquatic ecosystems. In this case, there are multiple aspects of the project that affect, or are affected by, the water situation in the region. They range from local availability, possible damage to the local rivers from dredging of construction materials, interactions with other river basins where water will be diverted to this project, and a failure to provide for the legislated Ecological Reserve from the Mokolo River.

The **Policy on the Environment** is of particular relevance in ensuring that known and pending water issues are integrated into broader environmental concerns as the project is implemented. For instance, *paragraph 6.30* states that “Based on the outcomes of the ESA studies, OPs will prepare loan conditions and covenants to cover any outstanding environmental concerns that need follow-up during project implementation. For Category 1 projects, the inclusion of conditions and/or covenants in loan documents shall ensure an effective compliance with the Bank’s environmental policies (e.g. submission of resettlement plans, creation of monitoring units, stakeholder consultations, etc.). For Categories 1 and 2 projects, OPs shall ensure that the ESMP is incorporated in the loan agreements.”

Discussion

Important regional water management issues create significant challenges for the success of the project. The work on regional environmental assessment, and particularly on the Limpopo Water Management Area, concludes that a negative balance (use over availability) already exists, will get worse by 2015 with current planned use, and could be exacerbated both by natural causes (climate change and declining river flow) and by manmade causes (a decision to install wet scrubbers in the Medupi project to control SO₂). The latter eventuality would more than double the water needs for the Medupi plant, currently projected to be 4.38 Mm³/a for the operation of the power station. The flue gas desulfurization units would add about 7.7 Mm³/a to this amount.⁶¹ This estimate does not include the approximately 6.0 Mm³/a that will be used for washing coal at the expanded coal mine.

Eskom argues that there is ample water from current and projected sources. To obtain the necessary volume of water to begin operations, Eskom is planning to draw down water at the Mokolo Dam (likely to mandate forced reductions in allocations for traditional users within a few years of commencing operations). It expects to obtain additional water from the anticipated construction of the MCWAP, a large, expensive diversion from the adjacent Crocodile basin. However, the Department of Water Affairs, which has not yet decided to go ahead with MCWAP, appears reluctant to authorize this project until it has a 100% guarantee of uptake by potential users.

⁶¹ See the discussion in Shelton, Chapter 3, pp. 75-88. See also SE Solutions, p. 25.

As is typical in these permitting processes, the Eskom projections assume that the other water uses will remain unchanged and that there is no downside risk to future precipitation levels, even though it is well-recognized that the last four years have enjoyed well above-average precipitation. However, other planning documents actually project a doubling of population in the area in coming decades as well as additional mining/industrial users of water, such as other new coal mines and power plants., Such eventualities would undermine the projections by Eskom for accessing water. In addition, given constraints in current transfer capacity and the tightness of deadlines to obtain the water required by Medupi and other planned power plants, and the current uncertainty about the Crocodile River catchment transfer project, Eskom could be forced to sequester water rights currently supporting farming in the area. The social and economic impacts of such prospective transfers have not been calculated. In addition, it is not clear that the Bank has been monitoring this issue in its supervision of the project.⁶² In fact, given this challenging situation, it is surprising that in the most recent supervision mission, Bank staff did not even meet with the Department of Water Affairs.

Finding

The Bank is not in compliance with all applicable policies. It failed to explain in the PAR how it complied with the Integrated Water Resource Management Policy in its appraisal of the project. In addition, the Loan documentation lacks sufficient specificity to ensure compliance with Bank policies. The only reference to the water issue in the Loan Document is a requirement for the Borrower to show a permit for the two phases of water allocation from the DWA, and that condition has not been fulfilled.

Recommendations

- The Bank should ensure that there is adequate participation by appropriately qualified technical experts in future supervisory and monitoring missions to conduct discussions with appropriate counterparts on the water availability issue. It is important to note that this issue must be resolved by early 2012 if Eskom is to meet the deadlines for installing the SO₂ scrubbers.
- The Bank should ensure that there is adequate participation by appropriately qualified technical experts in future supervisory and monitoring missions to conduct discussions with appropriate counterparts on the evolving Environmental Management Plans. The current plans (both construction and operations) are in the process of revision. There is no evidence that they have been reviewed by Bank staff.

⁶² Department of Water Affairs, Mokolo and Crocodile River (West) Water Augmentation Project (MCWAP): Phase 1. Draft Comments and Response Report, May 2010, p. 31.

Land and Water Degradation

Management Response

With regard to concerns about impacts on livelihood from degradation of land and water in the largely agrarian area, the Management indicates that there will be little permanent loss of land and soil resources due to the establishment of the power station and the ash dump on limited acreage. It further argues that the project design has recommended that the topsoil be removed and stored prior to construction. This soil will be used later for rehabilitating sloping areas, for example on the sides of the ash dump. Appropriate mitigation measures would be implemented to ensure that soil erosion does not occur. In addition, Eskom has developed an Environmental Management Plan (EMP) which will form the basis for monitoring and minimizing risks of impacts to the environment and the neighboring communities.⁶³

According to Management, no major impacts are anticipated for ground water quality as overall water usage by the power plant is significantly reduced in comparison with older generation thermal plants. Management describes a monitoring program for surface and groundwater quality and levels that will be established on the project site. This will include monitoring water quality of neighboring boreholes; monitoring groundwater quality and water levels; monitoring water quality used for irrigation; and, implementation of water use or water wastage minimization plan.⁶⁴

Applicable Policies

Paragraph 3 of the **Bank Policy on the Environment** stipulates: “The new policy recognizes the on-going degradation of the environment across the continent in spite of significant strides made at national and regional level in establishing the necessary legal and institutional frameworks to deal with such issues.” The Policy requires Bank staff to pay attention to the potential for degradation in all projects. *Paragraph 3.2.4* reinforces this point with the conclusion: “Among the environmental problems highlighted in the Assessment are the destruction of natural resources and ecosystems (forests, water, and marine and coastal resources), soil erosion, and air pollution. Africa is losing about 1.3 million hectares of forest each year. An estimated 500 million hectares have been affected by soil degradation since 1950, including 65% of the continent’s agricultural land.” For operational purposes, the Bank made a commitment in *Paragraph 4.4.* of that Policy to “strengthen its on-going activities, and also collaborate with other development partners to stem the tide of deterioration of the natural resource base, with special attention on land degradation, bio-diversity, destruction of tropical forest, and loss of cropland”

⁶³ Shelton, op.cit.

⁶⁴ Ibid.

Discussion

Land and water degradation can take many forms in such a project. The management of ash dumps is only the most visible source of such potential degradation whether managed on a wet or dry basis. While the Medupi ash dump is designed to be minimally liquid and a lining will be installed between ash and soil, there remains the risk that the ash dump could leach into the ground and contaminate the local water supply. The EIA classifies this possibility as a “high risk” on this project, based on Eskom’s experience with the established Matimba power station.⁶⁵ However, given that the dump is intended to have no pooled water, there may be greater risk from particulate matter coming off the dry surface. The community is anxious about the degradation of air quality, and its possible impact on both their families as well as their current livelihoods. The validity of this concern is difficult to evaluate in the absence of a strong research base on the possible impacts from changes in air quality on people and the farm animals in the area.

Some elements are unknown owing to their contingent nature. In the case of installing flue gas desulfurizing units, for instance, their overall sustainability involves two major waste streams. Dewatering of the effluent can be only partially solved by recycling water back into the scrubbers; the remainder has to go somewhere. According to one analysis, “It will be required to dispose of approximately 523,700 m³/annum of waste water depending on the extent of associated dewatering processes and the number of recycles before it is necessary to dispose of the process water. In this regard the higher the number of cycles the greater the concentration of the chlorides. Typically waste water has a chloride level of approximately 12,000 ppm.”⁶⁶ In addition, there will be massive amounts of processed lime from the scrubbers, and while the resulting gypsum theoretically has commercial value, the market in Southern Africa would be overwhelmed by the gypsum available from Medupi alone. The projected 1.2 million tons of gypsum estimated from Medupi annually, is unlikely to find a market since Kusile will use the same technology and is closer to the potential markets. Disposal of gypsum on site around Medupi can by itself create serious fluoride pollution, and in association with the ash (if they were mixed), one is likely to experience leaching of lead and magnesium into the ground water.⁶⁷

Finding

It is important to note that the evidence of water and land degradation, if it occurs, will not be clear until the power plant is operational. **Consequently, it is not possible to reach a firm conclusion about Bank compliance with the applicable policies before Medupi becomes operational.** The role of Bank supervision missions at that time will be crucial for ensuring the compliance of the project with Bank policies.

⁶⁵ Environmental and Social Impact Assessment Report, p. 109.

⁶⁶ Singleton, p. 60.

⁶⁷ Ibid.

Recommendation

- The Bank, not having had an opportunity to conduct a timely review of the initial EMP, should use the opportunity created by the drafting of a revised EMP to fully assess the compliance of the many water, air, and land issues treated by the Plan with the requirements in the applicable Bank policies. Equal attention should be paid by Bank staff to the pending operational EMP that is currently under review in Eskom and DEA. Many issues come under the heading of resource degradation, and the most effective Bank tool to address them is the Environmental Management Plan. For that reason the EMP plays an important role in the Bank's Environmental Policy.⁶⁸ The borrower has informed the Panel that a new construction EMP has been put through processing, including approval by the DEA.

C. Consultation with the Community and Cultural Rights

The Request and Management Response

The Requesters state that “[t]he Bank failed to consider community consultations and participation processes in the assessment of the project, and that local communities, who live close to the power plant were subjected to removals and the desecration of ancestral graves, which they say demonstrated a gross violation of their cultural and human rights.”

The Management states that community consultations were conducted during the environmental and social impacts assessment process in line with South Africa's law and the Bank's requirements. The Management indicates that several public meetings were held to inform the public about the project. The findings of the draft ESIA were also presented in public meetings which offered an opportunity for the affected people to provide comments. In addition, the registered affected persons were informed of the planned public open days and meetings by fax or e-mail.⁶⁹ Furthermore, key stakeholders and affected persons were engaged on an individual basis and special attention was paid to consultations with the affected landowners within the affected area.

The Management also indicates that Eskom chose projects sites which are far from the community and there was no resettlement involved. With one exception, there were no people living on the three farms that were purchased by Eskom for construction of the power plant and associated facilities. The one full-time worker who was residing on one of the farms was relocated, with his consent, by the owner of this farm to one of his other properties.⁷⁰

⁶⁸ Policy on the Environment, 2004, pp. 22-26.

⁶⁹ Management Response, p. 9.

⁷⁰ Ibid.

Applicable Policies

The Bank has a number of policy documents that are applicable to the issue of public consultations. These are:

- **The Environmental and Social Assessment Procedures for African Development Bank's Public Sector Operations** (June 2001): *Para 3.21* requires the Borrower to consult primary and secondary stakeholders during ESIA preparation. *Para. 3.34* states that the Bank's review of the ESIA in Category 1 projects must ensure that stakeholder participation findings are included in the ESIA report.
- **Policy on the Environment** (February 2004): *Para. 5.3.15* states that, in order to ensure development effectiveness, the Bank should encourage the involvement of all stakeholders in trade-off discussions that affect their livelihoods so that they can retain control of and access to the resources they need to sustain their livelihood. *Para 6.20* emphasizes that all stakeholders must be identified during the scoping stage of the ESIA and regularly consulted on the progress of the assessment.
- **Involuntary Resettlement Policy** (November 2003): *Para 1.1.6* states that the policy has been developed to address involuntary physical displacement and the loss of other economic assets of people caused by Bank-financed projects and programs. *Para 3.2* requires that particular attention must be given to socio-cultural considerations, such as the "cultural or religious significance of land". *Para 3.3* states that particular attention should be paid to the needs of disadvantaged groups among the displaced, especially those "below the poverty line...those without legal title to assets and female headed households." *Para 3.4.2 (b)* adds that the category of people who may have a claim under this policy includes those who have spiritual and/or ancestral ties with the land (e.g. graveyards...).
- **Handbook on Stakeholder Consultation and Participation in ADB Operations** (2001): *Para 1.4* clarifies that the purpose of the Handbook is to provide guidance to staff on what it can do to promote participation at every stage of the Bank's project cycle. *Para 2.4.2* states that a "fundamental principle of participation is that all legitimate stakeholders be heard—in particular women and other vulnerable groups that have traditionally been excluded." *Para. 2.5.5* recognizes that it can be difficult to reach out to marginalized groups and ensure that the true priorities of the poor and vulnerable groups are represented and that the process can be co-opted by powerful and articulate stakeholders to the exclusion of the poor and disadvantaged. *Para 3.1.3* makes clear that there are opportunities to introduce participation even in projects that are under implementation or near completion. *Para 3.1.5* states that it is relatively easy to promote participation where governments are supportive of participation and where governments and civil society enjoy collaborative working relations. *Para 3.1.7* stipulates that Bank staff have a responsibility to ensure that projects are prepared and implemented in a participatory way. *Para 3.5.2* states that during the appraisal mission the Bank staff must hold meetings with primary and secondary stakeholders to update them on the progress of the project and to seek their inputs on specific project details and ensure that the participatory process and outcomes are reflected in the mission aide-memoire and back to office report. A description of the participatory process should also be included in the Project Appraisal Report. *Para*

3.6 makes clear that while during implementation, primary responsibility for promoting participation lies with the staff of the project implementation unit and not the Bank, the Bank should still monitor participation and help encourage and support it. In this regard, *Para 3.7*, requires that during supervision, the Bank staff should travel to the project site to meet with project beneficiaries and other stakeholders to solicit their views on the project and its progress.

- The **Gender Policy (2001)** states in *Section 5.4* that the key objectives of the policy are to ensure that gender analysis is an “an integral part of all Banks’ policies, programmes and projects.” *Section 5.5.14* elaborates that this objective includes ensuring “that women’s needs and priorities are addressed in public investment programmes encompassing economic infrastructure, electrification, the development of alternative sources of energy” and that the Bank supports policies and programs that “ensure the active involvement of women in environmental decision and policy making in RMCs.” *Section 6.1.19* adds that “Since women’s viewpoints may not always be adequately taken into account, Bank programme/project missions will therefore take special measures to ensure women’s full participation in these processes....Particular attention will be paid to the location and scheduling of activities, the way in which meetings are organised...”

Discussion

It is clear from both the Summary EIA,⁷¹ and the materials appended to the full EIA that an extensive effort to engage in public consultations was made by the borrower. These consultations were based on advertising in national and local newspapers, subsequent notifications in national and local newspapers, several key stakeholder meetings, distributing background information documents and a series of information letters, holding public forums, and posting of the draft EIA in public libraries, municipal offices and on the internet.⁷² The reports of these consultations reveal a rich fabric of concerns about the impact of the Medupi power station on local lives and livelihoods. Much of the commentary by people from the community was well informed, touching on many relevant environmental and social aspects of the project.⁷³ A number of those who participated in these consultations expressed limited confidence in the project’s claims that they will also benefit from many aspects of the project. They insisted, for example, that they had never been consulted about the planned water development projects and were concerned about the implications of the project for water availability in the area, pointing to the serious water stresses currently affecting the project area.

Despite these efforts at consultations, it is striking that all of the members of the community whom the Experts met in their investigations at the project site, including community leaders, raised lack of consultation as one of their primary concerns about

⁷¹ AfDB, Executive Summary of “South Africa: Environmental Impact Assessment for the Medupi Power Plant Project of Eskom,” 1 July 2009, pp. 15-16.

⁷² Para 2.7 of the ESIA, p7-8.

⁷³ See Issues Trail, Appendix 1a of the Environmental Impact Assess Report for the Proposed Establishment of a new Coal-Fired Power Station in the Lephalale Area, Limpopo Province, 22 May 2006. This appendix runs over 200 pages. The written comments themselves are many more hundreds of pages.

the project. They claimed to have had no timely knowledge about the borrower's efforts to engage in public consultation or about the documents the borrower had posted in public locations for public review. The assertions of lack of knowledge about the consultations were most emphatic in the case of the representatives of the Maropong community and of the traditional leadership in the project area. This is particularly noteworthy because these communities include the poorest and most disadvantaged people in the project area. This discrepancy in descriptions about the borrower's efforts at public participation raise important questions both about the methods used by the borrower to engage in public participation and about how representative of community views the consultations actually were. These questions include the following:

- What efforts did the borrower make to ensure that it was advertising its consultation efforts in the media and in a language most likely to be accessed by the poorest and most vulnerable of the primary and secondary stakeholders in the Medupi project?
- Were the advertisements and other communications made in a form and in a language that was accessible to the poorest and most vulnerable groups in the Lephalale area?
- Where the public consultations held in venues and at times that were convenient for the poorest and most vulnerable groups in the project area?
- Were these meetings held at times that facilitated participation by women, as required by the Bank's Gender policy?
- Was the language of the consultations that of the majority of the local population and was the format of the public consultations appropriately responsive to the culture and needs of both the majority and the minority populations of the project area?

These questions are particularly relevant because the Lephalale area has a population of approximately 100,000 people of whom about 51% are men. Even though a small majority of the population in the area are men, over 50% of poor households in the area are female headed households.⁷⁴ Approximately 90% of the population are African and slightly under 10% are white. The major languages spoken in Lephalale are Sepedi at 53.1%; Setswana 29.2%, and Afrikaans 9.1%. This means that less than 10% speak English as their first language. In addition, the level of illiteracy in the region is likely to be significant, given that 26% of the population have had no schooling and another 25% have had minimal schooling.⁷⁵ In addition, there is a high poverty level in the area—

⁷⁴ The average population distribution in Limpopo province is that 54.6% are women. According to the provincial Integrated Development Plan, the reason for the relative dominance of men in Lephalale is because of the influx of workers who come to work on contract on the power plants and coal mines in the area and leave their families in their rural homes. Integrated Development Plan, Limpopo Province, 2009-2010 p. 17. Other indicators of this phenomenon are that the size of the school going population in Lephalale is 42% of the total population compared to a provincial average of 53% and that the average household size in Lephalale is 4.1 persons per household compared to a provincial average of 4.3. Id.

⁷⁵ Neville Bews, Social Impact Assessment & Skills Audit – Matimba Brownfields Extension Project, April 2006, pp. 21-27.

62.8% of the population are living in poverty.⁷⁶ One indicator of the level of poverty is that currently, 32% of school age children do not attend school.⁷⁷

However, the ESIA stipulates, and this was verified by the Panel in their discussions with Eskom, that the primary means through which the company and its ESIA consultants sought to communicate with the community were newspapers. There are three local newspapers in the area, two of which are mixed English and Afrikaans language newspapers and one of which is in one of the other local languages. Similarly, the national newspapers are either in English or Afrikaans. This means, even assuming information was put in all three local newspapers—an assumption rejected by members of the local community-- that the languages in which information about consultations were conveyed to the local communities were not the first language of a substantial portion of the local community.

Second, given the low level of education of most of the inhabitants of the area, it is clear that newspapers are not an effective means of communicating with the local community. None of the people with whom the Experts spoke, including representatives of Eskom, could recall information on the consultations being advertised on radio or having heard about the consultations through their usual channels for gaining new information about their community. In addition, the Panel was informed by a number of community members that the most effective way to communicate with those stakeholders living in rural areas outside Lephalale and Marapong was through the two local traditional authorities. The representatives of one of these traditional authorities informed the Panel that they had not been informed of these consultations and had had no opportunity to convey their views to Eskom or its consultants during the ESIA process. Similarly they are not represented on the project's Environmental Management Committee.

That the consultation process failed to reach all groups in the affected community is also indicated by the fact that the vast majority of the written comments included in the ESIA record are in English and the rest are in Afrikaans. It is important to note that the Annex to the ESIA includes Xerox copies of the actual written submissions and so shows the language in which the submission, in fact, was made. This suggests that, even allowing for the possibility that some participants did not write their submissions themselves, a disproportionate number of the submissions were in either English and/or Afrikaans, the first languages of less than 20% of the local population. Given the demographics of the area and its generally high levels of poverty and low levels of education this suggests that the actual participants in the public consultations disproportionately represented the minority population groups in Lephalale and that the borrower's efforts at consultation were not fully effective.

The sharing of social and environmental information with the community could be strengthened considerably. At the present time, periodic reports to the DEA and other environmental monitoring data are said to be available "on request." If the Bank wishes to use this opportunity to help the communities around Medupi to better understand the

⁷⁶ Id.

⁷⁷ Lephalale Integrated Development Plan 2010-2011, p133

degree to which Medupi affects the health of the environment and its residents, it should urge the borrower to publicize its information in the community at the same time it is provided to the regulators. This level of transparency and the sense of partnership with the community could help build trust over the long term.

Findings

Based on the above information, the Panel finds that the Bank staff's appraisal of the consultation efforts did not comply with the Bank's policies' requirement to ensure that the efforts at public consultation incorporated all affected populations groups, particularly the poor and the marginalized. In particular, the Bank staff failed to comply with the Bank's Policies on the Environment, Involuntary Resettlement, and Gender; and the Environmental and Social Assessment Procedures for African Development Bank Public Sector Projects, They also did not follow the procedures for assessing consultation stipulated in the Handbook on Stakeholder Consultation and Participation in ADB Operations.

Given the complex cultural, racial, gender and ethnic make-up of the Lephalale community this failure is significant. It raises concerns that the Bank staff have been too accepting of the borrower's assertions, accompanied by copious paperwork, that it had engaged in adequate consultation, despite the clear instructions in Bank policies that Bank staff pay close attention to the complex social and cultural dynamics operating in the project area in their assessment of consultations in regard to the project. The relevance of this requirement is particularly strong given the complex social, cultural, racial and ethnic legacy issues in the project area. In addition, the fact that the Bank was assessing this project after all the environmental and social impact studies were completed and the project was already being implemented increased the importance of an effective and careful assessment of the adequacy of the consultations undertaken. **The Bank's failure to comply with the applicable policies is particularly noteworthy in this case. As indicated above, the deficiencies of these consultations were clear from a careful reading of the ESIA and its annexes. The consequences of the Bank's failure to comply with its own policies and procedures in regard to consultation is that it may have under-estimated the full range of the adverse social impacts of the project, particularly its impacts on poor and vulnerable population groups. Given the complex legacy issues in South Africa, this is a significant oversight.**

Recommendation

- The IRM recommends that the Boards require Bank Management and staff to undertake the following actions in order to correct its failure to comply with the applicable Bank policies on consultation:
- The Bank require the borrower to ensure that there is adequate representation from all sectors of the affected community on its Environmental Management Committee. The proactive sharing of all environmental information, and particularly monitoring data from air and water sources, with the EMC and the

public will ensure that the borrower, all parts of the affected community, and the Bank are informed about all relevant environmental and social impacts and issues related to the project.

- In all future supervision missions, the Bank staff ensure that they communicate to all relevant sectors of the Lephhalale community in a timely and culturally and socially appropriate way that they will be visiting the Lephhalale community and invite the community to meet with them to discuss the project or to communicate any information they deem appropriate to the Bank staff. The staff should then include information on their meetings and communications with the local community in all future reports, aide-memoires and other documentation relating to Bank supervision missions.

Issues of Graves

The Request and Management Response

The Requestors contend in their request that there are graves that are at risk of being desecrated by Medupi. They contend that, while there may only be two “formal” grave sites that have been identified in the course of project preparation, there are likely to be unmarked graves scattered over the project area. They base this contention on the fact that the local communities are poor and, over generations, have been forced to move around the area. They argue that no real effort has been made to identify such unmarked graves and so the risk of desecration remains substantial. They contend that better consultations could have mitigated this risk.

On the other hand the Management indicates that there are only two graves in the project site, one of which is an old grave for which there is an affidavit showing that the grave has not been visited since 1967. Eskom following the appropriate legal procedures, has relocated this grave to a formal cemetery. Management further informs that the second grave is of a child, and Eskom has consulted the mother of the child who in principle has agreed to the relocation of the grave, but she is being prohibited from signing the agreement by other stakeholders opposed to the project.⁷⁸ In addition, Eskom is required to immediately report and investigate if any archaeological sites are exposed during construction work.

Applicable Policies

Involuntary Resettlement Policy (November 2003): *Para 1.1.6* states that the policy has been developed to address involuntary physical displacement and the loss of other economic assets of people caused by Bank-financed projects and programs. *Para 3.3* states that particular attention should be paid to the needs of disadvantaged groups among the displaced, especially those “below the poverty line...those without legal title to assets and female headed households.” *Para 3.4.2 (b)* adds that the category of people who may have a claim under this policy includes those who have spiritual and/or ancestral ties with the land (e.g. graveyards...).

⁷⁸ Management Response, p. 10.

Discussion

It is clear that, pursuant to the Resettlement Policy, the Bank staff is required to pay careful attention to the needs of disadvantaged groups, particularly the poor and female headed households who may not have formal title to land but may attach a special significance to particular pieces of land. This requirement is pertinent in the specific situation of Lephalale because of the history of the region and of forced relocations in South Africa. In fact, the Panel, in the course of its investigation, met people whose ancestors worked for many years on the local farms. In addition, based on the Panel's discussions with representatives of the local communities, there is a distinct possibility that the local communities include people or the descendants of people who were either forced to leave pieces of land to which they believe they have a claim or whose ancestors suffered this fate. Moreover, these people know or believe that their ancestors are buried on the land and that their burial sites are now at risk of desecration by the Medupi project.

Understanding and evaluating these claims requires consultation with these people and with historical and anthropological experts who understand the history and culture of the population groups in the project affected region. In fact, the Panel was informed that the culture of the local communities accepts that people can become separated from the physical location of the graves of their ancestors and allows for the possibility of a symbolic relocation of the ancestor's graves to a new location at which the affected families can perform their cultural rituals. These "symbolic graves" can be relocated without serious complication only if the appropriate rituals are performed. It is not possible for the borrower or the Bank to know of the location of these symbolic graves without adequate consultation with the local communities. Such adequate community consultations can also serve to validate the claims being made by specific community members both because the community will have knowledge about these claims and about the ability of the claimants to perform the appropriate rituals. It is important to note, particularly given the complex legacy issues relating to forced dispossessions of land and forced relocations in South Africa, that the issue of graves serves as an important proxy for helping to determine historical claims to land by communities that lost their lands in the past and are now unable to demonstrate formal title to the land. In this regard, it is important to note that the Lephalale integrated development plan indicates that about 200 land claims have been filed in the Lephalale region⁷⁹. Moreover, the World Bank Inspection Panel was informed by the representatives of a local tribe, the Seleka tribe, that they claimed that Medupi is being built on land that historically belonged to the Seleka tribe.⁸⁰

⁷⁹ The Integrated Development Report indicates that in 2001 there were 200 claims made in Lephalale and an additional number in the surrounding rural areas. Eventually 52 of the Lephalale claims were accepted for review, of which 11 have now been settled. The remaining 41 are still outstanding. The 5 rural claims involve 700 households, 3350 people and 3637 hectare of land. While none of these claims appear to relate specifically to the Medupi project site, they do raise questions about the extent of historical claims to the land in this region and whether they were adequately addressed through community consultations in the planning process of the project.

⁸⁰ World Bank, *South Africa: Eskom Investment Support Project: IBRD Loan No. 78620-ZA*, November 2011, para. 526, pp. 123-124.

Unfortunately, there is nothing in the record to indicate that the borrower engaged in such consultations about either the existence of symbolic graves or land claims with the affected local communities. Similarly there is nothing to indicate that the Bank staff, in their evaluation of the project made any effort to assess these issues and so to ensure that the project was fully compliant with the relevant policy. Thus the Bank's failure to comply with either the requirements in regard to consultation, as indicated above, or with Section 3.4.2(b) of the policy on involuntary resettlement relating to such ancestral ties to land as graves, creates a risk that the Bank, inadvertently, has become complicit in reinforcing the process of depriving the affected local communities of their ancestral lands of which they were dispossessed during the past South African regime.

Finding

The Panel finds **that the Bank was not sufficiently rigorous in its assessment of this policy to determine either that no graves had been or could have been desecrated by the Medupi project or that the borrower had established adequate procedures to consult with the community about the existence of either physical or culturally significant gravesites that were vulnerable to desecration by the project. As a result the Panel finds that the Bank has failed to comply with the applicable policy in regard to this issue.** Moreover, it notes that the Bank cannot be sure that it has avoided the risk of being inadvertently complicit in depriving the local community of their historical lands without further consultations with the local communities.

Recommendation

- The Panel recommends that the Bank take steps, consistent with the requirements of its own policies on participation and consultation, to determine that either there are no graves that have been or are vulnerable to desecration during the construction and operation of the Medupi project or that appropriate compensatory measures have been taken by the borrower to deal with any graves that have been or could be desecrated in the course of the construction and operation of the project. In addition, the Bank should establish that the affected communities do not have any outstanding historical land claims that could be adversely affected by the Medupi project. The implementation of these actions should be monitored and reported on by the Bank staff who participate in future Bank monitoring missions to this project.

V. RECOMMENDATIONS

1. An environmental specialist should be included in all future supervision missions to ensure progress on safeguard measures not yet completed at the time construction began. Such participation is needed to ensure that the commitments made in the Technical Annexes to the Appraisal Report are met and should involve more than checking boxes on compliance with DEA permits. Further, consideration should be given to including other staff, for instance, from the Departments in charge of climate change in the supervision missions who can bring a focus on that issue to the dialogue with the borrower.
2. The Bank should complete expeditiously the revisions of the Energy Sector Policy, keeping intact the current draft language that “The Bank will integrate energy dimensions in relevant sector policies, strategies and operations.” The Bank also needs to ensure that its energy policy is consistent with its existing environmental policies and related policies at its partner multilateral development banks.
3. Management needs to include in its supervision, close monitoring of economic, social and environmental changes in the air and water quality regions around Medupi to ensure that (1) the results of follow-up studies and outreach exercises such as the EMP are fully incorporated into the criteria for monitoring, and (2) initial compliance is not eroded by measures beyond the immediate purview of the power project.
4. Management should carry out the steps described in the CRMA to ensure strong monitoring of the project: (1) all reports of supervision missions should report on progress in achieving progress on climate change; and (2) monitor country level outcomes as relates to climate change resilience. On the latter issue, special attention should be given in reports on water status in the region important to Medupi.
5. The CRMA states that the Bank will be replacing the Environment and Social Impact Assessment (ESIA) guidelines with a new more comprehensive Environment, Climate, and Social Impact Assessment (ECSIA) to be able to take climate considerations more fully into account. Now, more than two years later, Management is still drafting an approved ECSIA framework and needs to go through a public consultation phase. The Bank should complete and issue the ECSIA framework expeditiously.
6. The Bank needs to pay close attention, during upcoming supervision missions, to the question of how Eskom, DEA and DWA resolve the water availability issue and decide on the ultimate installation schedule for the flue gas desulfurization units. That is an explicit condition of the financing agreements with the African Development Bank.
7. The Bank should review the pending Environmental Management Plans, particularly for the operational phase, to ensure that the emission monitoring plans reflect the latest findings with regard to mercury, and if necessary, bolster the tracking of such emissions that source from Medupi, and on a cumulative basis for the Waterberg region.

8. The Bank should ensure that there is adequate participation by appropriately qualified technical experts in future supervisory and monitoring missions to conduct discussions with appropriate counterparts on the water availability issue. It is important to note that this issue must be resolved by early 2012 if Eskom is to meet the deadlines for installing its SO₂ scrubbers..
9. The Bank should ensure that there is adequate participation by appropriately qualified technical experts in future supervisory and monitoring missions to conduct discussions with appropriate counterparts on the evolving Environmental Management Plans. The current plans (both construction and operations) are in the process of revision. There is no evidence that they have been reviewed by Bank staff.
10. The Bank, not having had an opportunity to conduct a timely review of the initial EMP, should use the opportunity created by the drafting of a revised EMP to fully assess the compliance of the many water, air, and land issues treated by the Plan with the requirements in the applicable Bank policies. Equal attention should be paid by Bank staff to the pending operational EMP that is currently under review in Eskom and DEA. Many issues come under the heading of resource degradation, and the most effective Bank tool to address them is the Environmental Management Plan. For that reason the EMP plays an important role in the Bank's Environmental Policy. The borrower has informed this panel that a new construction EMP has been put through processing, including approval by the DEA.
11. The IRM recommends that the Boards require Bank Management and staff to undertake the following actions in order to correct its failure to comply with the applicable Bank policies on consultation:
 - The Bank require the borrower to ensure that there is adequate representation from all sectors of the affected community on its Environmental Management Committee. The proactive sharing of all environmental information, and particularly monitoring data from air and water sources, with the EMC and the public will ensure that the borrower, all parts of the affected community, and the Bank are informed about all relevant environmental and social impacts and issues related to the project.
 - In all future supervision missions, the Bank staff ensure that they communicate to all relevant sectors of the Lephalale community in a timely and culturally and socially appropriate way that they will be visiting the Lephalale community and invite the community to meet with them to discuss the project or to communicate any information they deem appropriate to the Bank staff. The staff should then include information on their meetings and communications with the local community in all future reports, aide-memoires and other documentation relating to Bank supervision missions.
12. The Panel recommends that the Bank take steps to determine, consistent with the requirements of its own policies on participation and consultation, that either there are no graves that have been or are vulnerable to desecration during the construction and operation of the Medupi project or that appropriate compensatory measures have been taken by the borrower to deal with any graves

that have been or could be desecrated in the course of the construction and operation of the project. In addition, the Bank should establish that the affected communities do not have any outstanding historical land claims that could be adversely affected by the Medupi project. The implementation of these actions should be monitored and reported on by the Bank staff who participate in future Bank monitoring missions to this project.

Monitoring the Implementation of Decisions by the Bank's Boards of Directors

The Panel, pursuant to its responsibilities under Paragraph 52(c)(iii), is required to recommend steps to be taken to monitor the implementation of any decision taken by the Boards of Directors based on this report. The Panel therefore recommends that Dr. Richard Bissell be appointed, together with the Director of CRMU, to conduct the annual reviews of the implementation of the Boards of Directors' decision until such time as the project complies with Bank policies as determined by the Director of the CRMU and Dr. Richard Bissell.