

AFRICAN DEVELOPMENT BANK GROUP



MANAGEMENT RESPONSE ON THE REQUEST FILED AGAINST THE SENDOU COAL-FIRED POWER PLANT PROJECT IN SENEGAL

26 September 2016

ACRONYMS

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| AFG | Advisory & Finance Group |
| AfDB | African Development Bank |
| BHEL | Bharat Heavy Electricals Limited |
| BOAD | Banque Ouest Africaine de Développement |
| CBAO | Compagnie Bancaire de l'Afrique de l'Ouest |
| CES | Compagnie d'Electricité du Sénégal SA |
| CESR | Corporate Environmental and Social Responsibility |
| CRMU | Compliance Review and Mediation Unit |
| DUP | Déclaration d'Utilité Publique |
| EPC | Engineering, Procurement and Construction |
| ESIA | Environmental and Social Impact Assessment |
| ESMP | Environmental and Social Management Plan |
| FMO | Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V. |
| GHG | Green House Gas |
| IACD | Integrity and Anticorruption Department |
| KEPCO | Korea Electric Power Corporation |
| MW | Mega Watts |
| NSD | Nykomb Synergetics Development, AB |
| PAPs | Project Affected People |
| PROMAC | Promac Engineering Industries |
| QP | Quantum Power |
| RMCs | Regional Member Countries |
| SENELEC | Société Nationale d'Electricité du Sénégal |
| SOCOCIM | Société de Cimenterie |

INTRODUCTION

1. This note was prepared in response to CRMU's Notification of Registration of application No: RQ2016/2 dated 10th of August 2016 (the "**Request**"), following two referrals to verification of compliance on May 9, 2016 and July 15, 2016 respectively. The first request was initiated by two Civil Society Organizations (CSOs): Takkom Jerry and Lumière Synergie pour le Développement (referred to as the "**First Requesters**") on behalf of some Project Affected People (PAPs) and the second request was introduced by two individuals Mr. Cheikh Fadel Wade and Daouda Gueye (referred to as the "**Second Requesters**") on behalf of other members of the Bargny community.

2. Together the First and Second Requests contain eight separate charges, for which, CRMU, following a compliance verification mission, concluded that *"the assessment of the Request shows that it fulfills the requirements for registration under Paragraph 23 of the IRM Operating Rules and Procedures and has therefore registered it for compliance review, in line with the preference of the Requesters, pursuant to Paragraph 22 of the IRM Operating Rules and Procedures."* (Item 10 of the Request). Therefore, CRMU has asked Management to *"submit any evidence indicating how it has complied or intends to comply with the Bank's relevant policies and procedures applicable to this project"* (Item 12 of the Request). The Management Response Section addresses each of these charges.

BACKGROUND AND CURRENT STATUS OF THE PROJECT

3. The Sendou Coal-fired Power Plant Project was approved on 25 November 2009 by the Board of Directors as a senior loan of 55 million euros in favor of *Compagnie d'Electricité du Sénégal (CES)* to develop and maintain a 125 MW coal-fired power plant located 35 km from Dakar in Sendou, Senegal. The total Project cost stood at EUR 206 million. The Bank co-finances this, alongside BOAD, CBAO and FMO. The Project is being developed on a "build, own, and operate" basis and targets to supply up to 40% of Senegal's electricity, which currently derives 80% of its electricity from diesel-fueled power generation. The Government of Senegal (GoS) has outlined a strategy for diversifying and increasing domestic power generation capacity with a combination of conventional thermal base load and renewable energy.

4. The project implementation was only initiated following the first disbursement at the end of August 2013. The Sendou Power Plant project has subsequently experienced further implementation delays due to shareholder issues resulting in cost overruns. On 30 October 2015, the Board of Directors subsequently approved the new debt restructuring of the Sendou Power Project, to address the increased risk profile through: (i) an amendment to the existing loan terms; and, (ii) a provision of a supplementary Senior Loan Facility of 5 million euros.

5. The Project Company is *Compagnie d'Electricité du Sénégal SA (CES)*, whose original sponsor is Nykomb Synergetics of Sweden. Late in 2012, AFG, an Investment Bank of Morocco joined as equity partner. In October 2015, Quantum Power acquired the equity interest of AFG and became joint equity sponsor with Nykomb. The construction of the power plant has been contracted out to two Indian companies: Bharat Heavy Electricals Limited (BHEL) and Promac Engineering Industries Ltd (Promac).

6. The new Project Sponsor, Quantum Power, took necessary measures to relaunch the construction of the power plant, and to secure additional equity needed to complete the Project and start commercial operation. Construction resumed in January 2016 and the Project is now back on track, with a commercial operation date scheduled for the last quarter of 2017.

7. Senegal faces the dual challenges of growing demand for electricity and a desire to reduce diesel-based power generation. Accordingly, the GoS has emphasized that Coal-fired electricity generation is strategically important to the country, as efficient and affordable baseload to address these challenges.

PROJECT DESCRIPTION

8. The project aims at developing an Independent Power Producer (IPP) producing at least 925GWh of electricity per year. The power will be delivered to the national interconnected grid system of SENELEC, Senegal's only public electricity utility company.
9. The scope of the project includes the development, design, procurement, construction, operation and maintenance of a 125MW coal-fired power plant on a 22 ha site located 35 km south of Dakar, in Sendou (Bargny). In addition, the Project Company will develop the required infrastructure to handle, store, treat and transport the coal from Dakar port to the site.

ENVIRONMENTAL AND SOCIAL SUSTAINABILITY

10. The Project has been rated as Category 1 in accordance with the Bank's 2001 Environmental and Social Assessment Procedures (ESAP). Potential environmental impacts for this coal fired power plant include air emission impacts (SO₂, NO_x, CO, PM₁₀) on sensitive receptors (e.g. people, domestic animals, birds, wildlife, etc.), impacts of water usage and water cooling on the recipient water body (the ocean) and fisheries, marine organisms, etc., ash disposal (both fly and bottom) etc.
11. The Sendou Power Plant is required to comply with the World Bank's guidelines for all air emissions, associated with this project. It also met AfDB air emissions requirements in effect at the time of approval. This is justified by the fact that the tariff rate for the sale of electricity agreed between SENELEC and the World Bank is based on the standards of the World Bank. Consequently, the Government of Senegal, by a letter signed by the Minister of the environment, exceptionally, allows SENELEC to implement the guidelines of the World Bank on air pollution standards for strategic reasons, as this will be the first coal-fired power plant constructed in Senegal.
12. The physical, biological and human environment impacts of the Project have been thoroughly assessed. Potential physical impacts include contamination of surface and underground water, alteration of local air quality due to dust and exhaust gas emissions, noise pollution produced by site equipment and disturbance of natural ecosystems and deforestation. Mitigation measures include recovery of used equipment oil and reduction of spillage to a strict minimum, construction of site sanitary facilities, regular maintenance of machinery and vehicles to minimize exhaust gas emissions, raising works contractors' awareness of the need to limit noise and promotion of practices notably to prevent equipment failures and ensure machinery conformity with required standards. Regarding biological impacts, the possible impacts consist of, among others, water pollution due to evacuation of sanitary wastewater from the plant, thermal pollution of the sea through circulation of hot water from the power plant, alteration of the air quality due to pollutants (NO_x, SO₂, CO₂), and contribution to climate change through GHG emissions.
13. To address specific environmental and social impacts, mitigation measures adopted include collection and treatment of the sanitary wastewater in order to restore its physical and chemical characteristics in line with the Senegalese wastewater standards, construction of an underground discharge pipeline to ensure adequate dispersal of the thermal plume, establishment of a station for the continuous measuring of SO₂ emissions and concentrations in the area, monitoring the wind direction and proximity of inhabited areas. The ash is intended to be used by the cement factory and the local brick manufacturing plant. In view of the proximity to densely urbanized areas (village of Bargny Minam), a health risk assessment was carried out through simulations of the dispersion of air emissions from the chimney of the power plant.
14. The objective of this study was to determine the concentrations averaged over the entire wind rose to determine the health impact on residents.
15. Because the plant is not yet in operation, it was possible in this study to vary certain parameters of the source term in order to maximize the impact of the installation on the air quality. The health risk

assessment then carried out on the basis of the source term (chimney height of 100 m) indicates that toxicological reference values (TRV) are not exceeded either independently or when summed up by target organs.

16. Concerning the monitoring of project's environmental and social aspects, support is provided by an external technical adviser, Parson Brinckerhoff, who has been contracted to ensure quality construction of the various components of the project. With regard to the Environment and social aspects of the project, the lenders technical advisor role encompasses among others (i) reviewing the environmental & social management plans produced by the Engineering and Procurement Contractor (EPC) to ensure their adequacy and appropriateness, (ii) ensuring overall compliance of these plans, monitoring reports and other documentation with the environmental and social policies guidelines and standards of the Bank as well as national legislation and regulations, and (iii) assessing the social performance of the project and measures undertaken to minimize social risks and enhance social benefits for the surrounding communities.

17. Details of the Requesters' complaints and Management's response and action plan to address the complaints are discussed in the next section.

MANAGEMENT'S RESPONSE TO ISSUES RAISED BY THE REQUESTERS

18. Following the reception of the CRMU's notice of registration of Request No.: RQ2016/2 against the Sendou Coal-fired Power Project, ORQR, as the Lead Management's Response Coordinator, organized an internal review of the complaints, in conjunction with OPSD.4 and ONEC.3, in charge of project's implementation and provision of environmental and social safeguards support, respectively. Together, ORQR, ONEC and OPSD constitute the Management Response Team (MRT), in this case. The Team agreed on the following management's response to the issues raised and a plan of action on the way forward.

Unviability of Government's Coal-Power Policy Option

ISSUE STATEMENT #1— *Unviable government policy option to use coal-fired power plant for Senegal as the country does not produce coal and will be obliged to import it from the international market.*

19. Management disagrees with the Requesters' claim of the unviability of government's policy option to use coal-fired power plant for Senegal, because the country does not produce coal and will be obliged to import it from the international market. During the preparation of the project, the viability of the coal-based power generation has been assessed and was judged to be more practical compared to diesel-based power generation, on several grounds:

20. Firstly, it is worth noting that Senegal, whose power supply for many years has mainly been diesel-based, neither produces oil nor coal. In either case, the country will be obliged to import the power source from the international market, should it choose to do so. The only difference is that coal is cheaper than diesel and by implication coal-based power generation would be cheaper and deemed more sustainable to meet the growing national energy demand than diesel-based power generation.

21. Secondly, Senegal's power sector has been facing formidable challenges for a number of years, which has led to the inability of the *Société Nationale d'Electricité du Sénégal (SENELEC)* to meet peak demand since 2004. This translates into frequent load-shedding with blackouts or brown-outs experienced on a large proportion of days in the year (176 days in 2008). A number of industrial customers generate their own power using more costly diesel generators since they need reliable power supply and their demand has not been estimated. Thus, owing to its affordability, coal-based power generation is perceived to be an appropriate response to overcoming these challenges more effectively than that of diesel-based.

22. Lastly, the operation is expected to enhance long-term economic growth by increasing Senegalese infrastructure capacity and thus support foreign direct investment, job creation, service delivery, and reduced costs of doing business and trade. The main development outcomes are expected to stem from infrastructure development and specifically from the reduction in service interruption and additional capacity to satisfy the demand growth of 7 to 8% per year.

Violation of the National Environmental Code

ISSUE STATEMENT #2: *The selection of the project site violates Article L13 of the National Environmental Code, which regulates sites' selection for similar projects. Of concern, is the fact that the Sendou Power Plant is sited close to an already existing cement factory, located at less than 2 kilometers away and another coal-fired power plant, with larger capacity, is envisioned close to the same site.*

23. Management is not in agreement with the Requesters' claim that the National Environmental Code has been violated in the context of this operation for the following reasons:

24. Article L13 of the National Environmental Code states that facilities classified in environmental Category 1, High-risk operation, should be issued an environmental/operating permit by the Ministry of the Environment under the conditions set out by Decree 2001-282 of 12 April 2001, before construction or commissioning. This authorization is subject to observance of a 500 m buffer zone from dwellings, buildings usually occupied by third parties, habitations, watercourse, water catchment etc.

25. The operating permit was delivered to Compagnie d'Electricité du Sénégal (CES) on May 7, 2010 (see Appendix 1 - *Permis d'exploitation*). Accordingly, the 22 ha site is surrounded by a 500 meter security zone of about 81 ha protecting the habitations and establishments accessible to the public, in conformity with the environmental code of Senegal. The operating permit was delivered taking into account the existing Cement factory.

26. The construction of the larger capacity coal-fired power plant of 250 MW in Bargny has been called off. Both the GoS & the Korean company, KEPCO, have decided not to go ahead with its construction, contrary to initial plans.

Local Community's Health at Risk

ISSUE STATEMENT #3 *Increased vulnerability of communities to air pollution and potential disruption of livelihoods because of the proximity of the coal power plant to the town's water supply, public facilities including the elementary school, a health center, a kindergarten, cemetery, and the only fishery product processing site that employs about 1000 women and other seasonal workers.*

27. Management differs on the Requesters' accusation increased local communities' vulnerability to air pollution and disruption of livelihoods because of the proximity of the power plant to local water supply, public facilities and the fishery processing site. The power plant's perimeter is located at a distance of at least 500 m from human settlements and other public dwellings. In addition, the project has been designed not to interfere with local fishing activities. To fulfill this obligation, the Project is set out to engage in the following actions:

- ***Fishery products processing site***— The area is used for artisanal fish drying, with removable structures in proximity to the power plant's site. This is done without formal land rights. However, in consultation with the local community, including the mayor of Bargny, the Project Company is providing a custom-built fish drying facility as part of its Corporate Environmental and Social Responsibility (CESR). The new facility will offer the local population much better economic, health and environmental benefits. It will be located outside of the plant exclusion zone, to ensure the safety of the users. The Project Company (CES) is currently launching a feasibility study for

the facility and has budgeted approximately USD 50,000 to support its implementation, which will be completed prior to commencing the operation of the Plant.

- **Water intake** —The sea-water cooling system has been designed to avoid carrying small fish by restricting the maximum flow velocity of water intake in conformity with World Bank guidelines. It avoids the ingress of larger species by means of screening and all pipes will be buried to avoid disturbing the sea-floor.
- **Water Discharge**—Environmental considerations are incorporated into the cooling water intake and outfall systems, so as to minimize the impact of the plant on the local marine environment and fishing activities. On the outflow, a weir system will be constructed to minimize the differential between exit water velocity and tidal velocity. The outfall system has been designed to meet World Bank guidelines for the temperature of water discharged (a maximum of 3°C warmer than adjacent ocean temperature at a distance of 100 meters from the discharge point), considerably less than seasonal natural variations in water temperature (17-28°C).

Potential Adverse Impacts on Cultural Heritage and the Nursery for Marine Biodiversity

ISSUE STATEMENT #4— Adverse impact of the coal power plant on an historic heritage site where the protected spirit of the village resides and a nursery for the regeneration of marine biodiversity

28. Management disagrees with this claim. On the contrary, the preparation of the ESIA/ESMP report has taken on board cultural heritage issues of concern to the local community and mitigation measures were provided in the report. Further consultations with the same community during implementation revealed the cultural significance for the locals of a baobab tree growing within the project's site, as it represents the protected spirit of the village. This issue was unknown at the time of project appraisal and Board approval. The project Company is sensitive and values local cultural heritage. It has decided to keep it undisturbed and safe in accordance with the wishes of the local community. Locals do not require access to the baobab tree, they just want it protected, according to discussions held between them and the developer.

29. Regarding the nursery for the regeneration of marine biodiversity, it is important to note that the sea water cooling system has intentionally been designed to avoid entraining small fish. By design, the temperature of the discharged water is expected not to exceed the +3°C norm from the adjacent ocean temperature at a distance of 100 meters from the discharge point, which is considerably less than seasonal natural variations in water temperature (17-28°C).

30. Furthermore, water discharge from the Project cooling system is being assessed, to ensure compliance with the World Bank's requirements. An expert marine engineering consultancy, Royal Haskoning, has been contracted by the Project Company to design the marine-side of the plant's cooling system, which includes a requirement to consider environmental parameters in system design, and an expert environmental agency, Fluidyn, has been contracted to review the thermal output in relation to environmental norms. The cooling system design will be tailored to ensure compliance with the analysis performed by Royal Haskoning, Fluidyn, World Bank and Senegalese requirements on thermal water discharge. This is being closely monitored by the Lenders Technical Adviser.

Breach of African Development Bank's environmental, social and human rights standards

ISSUE STATEMENT #5 — Breach of African Development Bank's environmental, social and human rights standards since there was no agreement signed with the right-holders of land titles, and no compensation was paid to the large majority of these holders. In addition, no Resettlement Action Plan was prepared to mitigate the project's negative social impacts.

31. Management disagrees with this claim and would like to assert that from the time the ESIA was conducted until its completion, the project's site was free of any type of occupancy, therefore no

resettlement action plan was prepared by the project, since no PAPs existed that needed to be displaced or compensated. The land belonged to SENELEC, who acquired it through a regular transaction.

32. Building on the results of the 2009 ESIA and on feedback from an independent consultant contracted to highlight significant issues raised in the ESIA, an Environmental and Social Management Plan ("ESMP") was prepared to mitigate any potential negative effect of the Project on the local environment. The ESMP provides a framework for the implementation and monitoring of the environmental and social management plan of the Project and is being regularly assessed by the Lenders Technical Adviser. (See Appendix 7: ESMP). The following provides a historical perspective on the land transfer of the project's site from the early days of the country independence to date:

- The Government acquired the Site and the surrounding area in 1964. Around the year 2000, the Government designated about 5,800 ha of land including the Sendou Site as an industrial zone. On 26 November 2008, the Government of Senegal dedicated the Project Site to the activities of SENELEC (See Appendix 2: *Attestation d'enregistrement délivrée par la Direction Générale des impôts et des domaines*).
- Information disclosure: The process of registering the land in the name of the state was launched and as required by Senegalese law, the prospective land transfer was advertised in French, an official and widely spoken language in Senegal, in the official journal "*Journal Officiel de la République du Sénégal*", for six months.
- On September 3, 2009, the President of the Republic of Senegal signed Decree no 2009-849 of 3 September 2009, declaring the ownership of the land be transferred to SENELEC. 54 ha were assigned to SENELEC, a DUP was issued (Déclaration d'utilité Publique) (See Appendix 3: Decree 2009/849- the article 4). The Site was subsequently sold to Compagnie d'Electricité du Sénégal ("CES" - the Project Company). The land purchase deed, approved on 14 October 2009, specifies that the sole use of the Site will be for constructing a power plant (See Appendix 4: *Land purchase*).

Imminent health risks from air pollution due to the lack of cumulative impacts assessment of the combined effects of emissions from three plants in the same location

ISSUE STATEMENT #6 — Imminent health risks from air pollution due to emissions from Sendou Power Plant, the cement factory and another coal-fired power plant with larger capacity of 250 MW which is scheduled to be built close to the same site. There was no cumulative impact assessment study prepared to measure the effects of emissions from these three plants.

33. Management believes that the above claims are factually incorrect. As mentioned in point 2 above, both GoS and KEPCO, have renounced plans for the construction of a larger coal-fired power plant of 250MW close to the Sendou power station.

Air Pollution:

34. The ESIA specifies clear environmental standards and threshold limits as regards (i) air quality, (ii) noise and (iii) rejection of wastewater. Accordingly, prevention against the risks of air or water pollution is subject to a framework that regulates the discharge of wastewater and air emissions. The Senegalese standard NS 05-062 on the quality of air emissions sets limits for emissions as well as concentration limits of pollutants in ambient air. These limits are defined in the ESIA (See Appendix 8 : *Lettre N°00053/MEPNBRLA/CT.CM adressée au Ministre d'état, Ministre en charge de l'énergie*). Accordingly, the Project is designed to minimize air pollution using the following procedures:

1. Coal with very low Sulphur content

2. A more efficient burner
 3. A NOx re-burner
 4. An electrostatic precipitator to remove small particles from emissions
 5. A smokestack over 150 meters high to ensure the wide diffusion (rather than local concentration) of any remaining particulates.
35. Compliance with these environmental standards is being assessed by the Lenders' Technical Adviser during the construction phase. Compliance will also be rigorously assessed and reported on regularly during the operational phase of the Project.

Cumulative impact assessment study:

36. The Environmental Social Impact Assessment (ESIA) includes a Cumulative Impact assessment, which takes into account the cement factory (SOCOCIM) located about 2 km from the power plant. To bring the Project analysis fully up-to-date, the project company has commissioned a review and subsequent revision of the air emissions model to demonstrate compliance with the World Bank and Senegalese legislation applicable to the Project. Management recognizes that, the original model did not consider the final technology selection for the plant, which promises to be more efficient and less polluting than that which was initially envisaged; nor did it take into consideration the low-Sulphur coal content now preferred under the project. The updated model scope has been reviewed by the Lenders' Technical Adviser, and will consider the impact of the Project in isolation as well as in its local setting. The results will be available by the last quarter of 2016.

Increased Vulnerability of the local Community

ISSUE STATEMENT #7: Increased vulnerability of the community to the consequences of coastal erosion.

37. It has come to Management's attention that the coastal villages of Minam and Bargny experience high levels of coastal erosion, which in the case of Minam, has required relocation of the village on a number of occasions historically. Although the construction and operational phases of the power plant would not cause nor have direct effects on the natural coastal erosion. Relating the project to the issue at hand may arise in part from the possibility that local populations that have settled close to the seashore would, because of the project's siting, no longer have latitude to move upland from the eroded sides.

38. Allegedly, prior to transferring the ownership title of the project's site to CES, relocation plans had been initiated for villagers who lived close to the seashore, by the former mayor, due to concerns over encroachment of the seawater into occupied land. It is also alleged that 600 – 1,000 plots of land were committed, some of which are located within the project's site and many more are located within the 500m buffer zone. No evidence is available to date to support this statement. Moreover, it appears that there is no documented agreement between the current Mayor, Bargny and Minam Villages, CES, SENELEC and other government officials on the validity of the allocated parcels of land.

39. Following the resumption of the Project in January 2016, the New Project Management team initiated a dialogue with SENELEC and reiterated its support for SENELEC and the Government of Senegal to effectively address local issues in relation to the Land use. Although CES owns the land, it is the responsibility of the GoS to formally deal with the population regarding the Site. CES has committed to providing such indirect assistance as appropriate.

40. The Environmental and Social Impact Assessment states that in the event that a resettlement of populations is required, a resettlement action plan would be prepared and cleared by the relevant authorities. Furthermore, in the event that the project would cause the displacement of some populations, the GoS

undertakes to compensate such populations at the level of the injury suffered by the latter in accordance with the provisions of the comfort letter N ° 005517/MEF provided to the lenders on 24 May 2013 (see Appendix 9: letter of comfort).

41. Management recognizes that there is an issue of vulnerability of members of the local community, with regards to encroachment of coastal erosion into their settlements. It takes strong interest in the issue and feels it has the moral obligation to endeavor seeking, appropriate and timely solutions, to resolve this problem, in conjunction with GoS, SENELEC, CES and other relevant stakeholders. Management is of the view that it is in the interest of the project to establish and maintain a good rapport with its surrounding communities throughout implementation and beyond.

Project-Affected People

ISSUE STATEMENT #8: Inadequate Consultation with Project-Affected People (PAPs)

42. Management strongly disagrees with the Requesters' assertion that the project inadequately engaged with the PAPs. From inception to date, public consultation with and disclosure of information to the project's stakeholder groups, including the PAPs followed a broad-based approach. From a socioeconomic point of view, public participation during the preparation of the ESIA constituted an important element of the Project development and has been a key foundation of the Project development from the outset.

43. An interactive method was adopted for conducting the ESIA, whose primary objective was to solicit and include the views, expectations and concerns of the different stakeholder and interest groups in the decision making process, particularly those residing in the project intervention areas. For the purposes of the ESIA, group interviews were carried out and discussions were held with all the stakeholders in the project. By undertaking a public hearing, the project developers also allowed the airing of the views of local authorities together with those of the local population. The process also benefitted from a series of meetings with local authorities, the PAPs of the municipality of Bargny, Yène, Sendou and Minam. Annex 10 provides a list of participants (Listes de Présence Bargny 1&2) to these meetings.

44. In August 2009, an environmental summary report was posted on the Bank's website, as well as in-country for a period of 60 days, as per the requirements of Bank's policies and procedures for category 1 projects. Until the filing of this Request, no objections were ever reported.

CONCLUSIONS

45. Management disagrees with the Requesters' claim of the unviability of government's policy option to use coal-fired power plant for Senegal, because the country does not produce coal and will be obliged to import it from the international market. During the preparation of the project, the viability of the coal-based power generation has been assessed and was judged to be more practical compared to diesel-based power generation, on several grounds:

46. Firstly, Senegal, whose power supply for many years has mainly been diesel-based, neither produces oil nor coal. In either case, the country will be obliged to import the power source from the international market, should it choose to do so. The only difference is that coal is cheaper than diesel and by implication coal-based power generation would be cheaper and deemed more sustainable to meet the growing national energy demand than diesel-based power generation.

47. Secondly, Senegal's power sector has been facing formidable challenges for a number of years, which has led to the inability of the Société Nationale d'Electricité du Sénégal (SENELEC) to meet peak demand since 2004. This translates into frequent load-shedding with blackouts or brown-outs experienced on a large proportion of days in the year (176 days in 2008). Thus, owing to its affordability, coal-based

power generation is perceived to be a more appropriate and effective response to overcoming these challenges than that of diesel-based.

48. Lastly, the operation is expected to enhance long-term economic growth by increasing Senegalese infrastructure capacity and thus support foreign direct investment, job creation, service delivery, and reduced costs of doing business and trade. The main development outcomes are expected to stem from infrastructure development and specifically from the reduction in service interruption and additional capacity to satisfy the demand growth of 7 to 8% per year.

49. Management disagrees with the Requesters' claim that the National Environmental Code has been violated in the context of this operation. Indeed, Article L13 of the National Environmental Code states that facilities classified in environmental Category 1, High-risk operation, should be issued an environmental/operating permit by the Ministry of the Environment under the conditions set out by Decree 2001-282 of 12 April 2001, before construction or commissioning. In addition, this authorization is subject to observance of a 500 m buffer zone from dwellings, buildings usually occupied by third parties, habitations, watercourse, water catchment etc. The operating permit was delivered to Compagnie d'Electricité du Sénégal (CES) on May 7, 2010 (see Appendix 1 - Permis d'exploitation). Accordingly, the 29 ha site is surrounded by a 500 meter security zone of about 81 ha protecting the habitations and establishments accessible to the public, in conformity with the environmental code of Senegal. The operating permit was delivered taking into account the existing Cement factory.

50. The construction of the larger capacity coal-fired power plant of 250 MW in Bargny has been called off. Both the GoS & the Korean company, KEPCO, have decided not to go ahead with its construction, contrary to initial plans.

51. Management differs on the Requesters' accusation increased local communities' vulnerability to air pollution and disruption of livelihoods because of the proximity of the power plant to local water supply, public facilities and the fishery processing site. The power plant's perimeter is located at a distance of at least 500 m from human settlements and other public dwellings. In addition, the project has been designed not to interfere with local fishing activities. To fulfill this obligation, the Project is set out to engage in the following:

52. Concerning the fishery products processing site, it should be noted that the area is used for artisanal fish drying, with removable structures in proximity to the power plant's site. This is done without formal land rights. However, in consultation with the local community, including the mayor of Bargny, the Project Company is providing a custom-built fish drying facility, as part of its Corporate Environmental and Social Responsibility (CESR). The Project Company (CES) is currently launching a feasibility study for the facility and has budgeted approximately USD 50,000 to support its implementation, which will be completed prior to commencing the operation of the Plant.

53. With regards to the water intake, it is important to note that the sea-water cooling system has been designed to avoid carrying small fish by restricting the maximum flow velocity in conformity with World Bank guidelines. It avoids the ingress of larger species by means of screening, and all pipes will be buried to avoid disturbing the sea-floor. Regarding the water discharge, it should be noted that environmental considerations are incorporated into the cooling water intake and outfall systems, so as to minimize the impact of the plant on the local marine environment and fishing activities. On the outflow, a weir system will be constructed to minimize the differential between exit water velocity and tidal velocity. The outfall system has been designed to meet World Bank guidelines for the temperature of water discharged (a maximum of 3°C warmer than adjacent ocean temperature at a distance of 100 meters from the discharge point), considerably less than seasonal natural variations in water temperature (17-28°C).

54. Management disagrees with the claim of potential adverse impacts on cultural heritage and the nursery for marine biodiversity. On the contrary, the preparation of the ESIA/ESMP report has taken on board cultural heritage issues of concern to the local community and mitigation measures were provided in

the report. Further consultations with the same community during implementation revealed the cultural significance for the locals of a baobab tree growing within the project's site, as it represents the protected spirit of the village. This issue was unknown at the time of project appraisal and Board approval. The project Company has decided to keep it undisturbed and safe in accordance with the wishes of the local community. Locals do not require access to the baobab tree, they just want it protected, according to discussions held between them and the developer.

55. Regarding the nursery for the regeneration of marine biodiversity, it is important to note that the sea water cooling system has intentionally been designed to avoid entraining small fish. By design, the temperature of the discharged water is expected not to exceed the +3°C norm from the adjacent ocean temperature at a distance of 100 meters from the discharge point, which is considerably less than seasonal natural variations in water temperature (17-28°C). Furthermore, water discharge from the Project cooling system is being assessed, to ensure compliance with the World Bank's requirements. An expert marine engineering consultancy, Royal Haskoning, has been contracted by the Project Company to design the marine-side of the plant's cooling system, which includes a requirement to consider environmental parameters in system design, and an expert environmental agency, Fluidyn, has been contracted to review the thermal output in relation to environmental norms. The cooling system design will be tailored to ensure compliance with the analysis performed by Royal Haskoning, Fluidyn, World Bank and Senegalese requirements on thermal water discharge. This is being closely monitored by the Lenders Technical Adviser.

56. Management refutes the claim that the project has breached Bank's environmental, social and human rights standards and asserts that, from the time the ESIA was conducted until its completion, the project's site was free of any type of occupancy. Therefore, no resettlement action plan was prepared by the project, since no PAPs existed that needed to be displaced or compensated. The land belonged to SENELEC, who acquired it through a regular transaction. Moreover, building on the results of the 2009 ESIA and on feedback from an independent consultant contracted to highlight significant issues raised in the ESIA, an Environmental and Social Management Plan ("ESMP") was prepared to mitigate any potential negative effect of the Project on the local environment. The ESMP provides a framework for the implementation and monitoring of the environmental and social management plan of the Project and is being regularly assessed by the Lenders Technical Adviser. (See Appendix 7: ESMP).

57. Management rejects the claims of imminent health risks from air pollution to local communities for lack of cumulative impacts assessment of the combined effects of emissions from three plants in the same location to be factually incorrect. As mentioned above, both GoS and KEPCO, have renounced plans for the construction of a larger coal-fired power plant of 250MW close to the Sendou power station.

58. The ESIA specifies clear environmental standards and threshold limits as regards (i) air quality, (ii) noise and (iii) rejection of wastewater. Accordingly, prevention against the risks of air or water pollution is subject to a framework that regulates the discharge of wastewater and air emissions. The Senegalese standard NS 05-062 on the quality of air emissions sets limits for emissions as well as concentration limits of pollutants in ambient air. These limits are defined in the ESIA (See Appendix 8 : Lettre N°00053/MEPNBRLA/CT.CM adressée au Ministre d'état, Ministre en charge de l'énergie). Accordingly, compliance with new environmental standards (i.e., Coal with very low Sulphur content; a more efficient burner; A smokestack over 150 meters high to ensure the wide diffusion (rather than local concentration) of any remaining particulates etc.), to minimize air pollution, is being assessed by the Lenders' Technical Adviser during the construction phase. Compliance will also be rigorously assessed and reported on regularly during the operational phase of the Project.

59. The ESIA does include a Cumulative Impact assessment, which takes into account the cement factory (SOCOCIM) located about 2 km from the power plant. To bring the Project analysis fully up-to-date, the project company has commissioned a review and subsequent revision of the air emissions model to demonstrate compliance with the World Bank and Senegalese legislation applicable to the Project.

Management acknowledges that, the original model did not consider the final technology selection for the plant, which promises to be more efficient and less polluting than that which was initially envisaged; nor did it take into consideration the low-Sulphur coal content now preferred under the project. The updated model scope has been reviewed by the Lenders' Technical Adviser, and will consider the impact of the Project in isolation as well as in its local setting. The results will be available by the last quarter of 2016.

60. Although the construction and operational phases of the power plant would not cause nor have direct effects on the natural coastal erosion, it has come to Management's attention that the coastal villages of Minam and Bargny experience high levels of coastal erosion, which in the case of Minam, has required relocation of the village on a number of occasions historically. Relating the project to the issue at hand may arise in part from the possibility that local populations that have settled close to the seashore would, because of the project's siting, no longer have latitude to move upland from the eroded sides. Allegedly, prior to transferring the ownership title of the project's site to CES, relocation plans had been initiated for villagers who lived close to the seashore, by the former mayor, due to concerns over encroachment of the seawater into occupied land. It is also alleged that 600 – 1,000 plots of land were committed, some of which are located within the project's site and many more are located within the 500m buffer zone. No evidence is available to date to support this statement. Moreover, it appears that there is no documented agreement between the current Mayor, Bargny and Minam Villages, CES, SENELEC and other government officials on the validity of the allocated parcels of land.

61. Following the resumption of the Project in January 2016, the New Project Management team initiated a dialogue with SENELEC and reiterated its support for SENELEC and the Government of Senegal to effectively address local issues in relation to the Land use. Although CES owns the land, it is the responsibility of the GoS to formally deal with the population regarding the Site. CES has committed to providing such indirect assistance as appropriate.

62. Management recognizes that there is an issue of vulnerability of members of the local community, with regards to encroachment of coastal erosion into their settlements. It takes strong interest in the issue and feels it has the moral obligation to endeavor seeking, appropriate and timely solutions, to resolve this problem, in conjunction with GoS, SENELEC, CES and other relevant stakeholders. Management is of the view that it is in the interest of the project to establish and maintain a good rapport with its surrounding communities throughout implementation and beyond.

63. Management strongly disagrees with the Requesters' assertion that the project inadequately engaged with the PAPs. On the contrary, from inception to date, public consultation with and disclosure of information to the project's stakeholder groups, including the PAPs, followed a broad-based approach. From a socioeconomic point of view, public participation during the preparation of the ESIA constituted an important element of the Project development and has been a key foundation of the Project development from the outset.

64. An interactive method was adopted for conducting the ESIA, whose primary objective was to solicit and include the views, expectations and concerns of the different stakeholder and interest groups in the decision making process, particularly those residing in the project intervention areas. For the purposes of the ESIA, group interviews were carried out and discussions were held with all the stakeholders in the project. By undertaking a public hearing, the project developers also allowed the airing of the views of local authorities together with those of the local population. The process also benefitted from a series of meetings with local authorities, the PAPs of the municipality of Bargny, Yène, Sendou and Minam. Annex 10 provides a list of participants (Listes de Présence Bargny 1&2) to these meetings.

65. In August 2009, an environmental summary report was posted on the Bank's website, as well as in-country for a period of 60 days, as per the requirements of Bank's policies and procedures for category 1 projects. Until the filing of this Request, no objections were ever reported on the project.

FURTHER ACTION

66. Management recognizes that there is an issue of vulnerability of members of the local community, with regards to encroachment of coastal erosion into their settlements. It takes strong interest in the issue and feels it has the moral obligation to endeavor seeking, appropriate and timely solutions, to resolve this problem, in conjunction with GoS, SENELEC, CES and other relevant stakeholders. Management is of the view that it is in the interest of the project to establish and maintain a good rapport with its surrounding communities throughout implementation and beyond.

EPILOGUE

67. A press release was issued on 21st September 2016 after a two-day meeting attended by CES/Badara, Senelec, GoS and community representatives to discuss the land claim issues. In the Press Release, the Mayor of Bargny has stated that the authorities have committed to compensate all those affected by the project including land owners. In his words – “the decision is already taken, they will be reimbursed.”

