



RAPPORT PROVISOIRE

—
EIES complémentaires à l'EIES du
projet de centrale pour une piste
d'accès et un gazoduc

—
Atinkou
—
Côte d'Ivoire



Supplementary environmental and social impact study report (according to World Bank environmental and social standards and IFC performance standards) of gas pipeline and access road for the Atinkou power plant

*ATINKOU gas thermal power plant construction project, on the site of
the village of TABOTH, in Ivory Coast*

Décembre 2019

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Acronyms and Abbreviations

AGEROUTE	Agence de Gestion des ROUTES
ANAGED	Agence Nationale de GEstion des Déchets
ANDE	Agence Nationale De l'Environnement
cf.	confère
CIAPOL	Centre Ivoirien Anti-Pollution
CIE	Compagnie Ivoirienne d'Électricité
CNF	Centre National de Floristique
CNPS	Caisse Nationale de Prévoyance Sociale
DBO	Demande Biochimique en Oxygène
DCO	Demande Chimique en Oxygène
EDD	Étude De Dangers
EIES	Étude d'Impact Environnemental et Social
EPI	Équipement de Protection Individuelle
FDS	Fiche de Données de Sécurité
FIT	Front Inter Tropical
FNDE	Fonds National De l'Environnement
FRI	Fiches de Renseignement à l'Importation
GES	Gaz à Effet de Serre
GSPM	Groupement des Sapeurs-Pompiers Militaires
ICPE	Installations Classées pour la Protection de l'Environnement
INS	Institut National de la Statistique
ISO	International Organisation for Standardisation (organisation internationale de standardisation)
LAeq	Equivalent Continuous Level ou Energy Averaging (niveau sonore équivalent)
LIS	Ligthing Imaging Sensor (détecteur de foudre)
MMR	Mesures de Maîtrise des Risques
MTD	Meilleures Technologies Disponibles
NA	Non-Applicable
NASA	National Aeronautics and Space Administration (administration nationale de l'aéronautique et de l'espace des États-Unis d'Amérique)
OCDE	Organisation de Coopération et de Développement Économique
OFT	Observatoire de la Fluidité des Transports
OIT	Organisation Internationale du Travail
OMS	Organisation Mondiale de la Santé
ONG	Organisation Non Gouvernementale
ONPC	Office National de la Protection Civile
ORSTOM	Office de la Recherche Scientifique et Technique Outre-Mer
OTD	Optical Transient Detector (téléscope de détection optique)
PAS	Plan d'Ajustement Structurel



PEHD	PolyEthylène Haute Densité
PGES	Plan de Gestion Environnementale et Sociale
PNAE	Plan National d'Action Environnementale
PNDEF	Plan National de Développement du secteur Education Formation
PND	Plan National de Développement Sanitaire
PNUD	Programme des Nations Unies pour le Développement
PNUE	Programme des Nations Unies pour l'Environnement
POI	Plan d'Opération Interne
PSI	Plan de Surveillance et d'Intervention
RGPH	Recensement Général de la Population et de l'Habitat
SACO	Substance Appauvrissant la Couche d'Ozone
SAMU	Service d'Aide Médicale Urgente
SDIIC	Sous-Direction de l'Inspection des Installations Classées
SGS	Société Générale de Surveillance
SIDA	Syndrome d'Immunodéficience Acquise
SIG	Système d'Information Géographique
SODECI	Société de Distribution d'Eau en Côte d'Ivoire
SODEXAM	Société de Développement et d'Exploitation Aéroportuaire, aéronautique et Météorologique
TDR	Termes De Référence
UICN	Union Internationale pour la Conservation de la Nature

Unités de mesures (traduite en SI)

° ' "	: Degré, Minute, Seconde
"	: pouce ou inch (= 0,0254 mètre)
%	: pour cent (partie sur 100)
‰	: pour mille (partie sur 1000)
°C	: degré Celsius ($0^{\circ}\text{C} + 273,15 = 273,15\text{ K}$)
µg	: microgramme (0,000000001 kilogramme)
µg/L	: microgramme par Litre
µm	: micromètre (= 0,000001 mètre)
an(s)	: année(s) (= 3 153 600 secondes)
dB	: décibel
dB(A)	: décibel pondéré A
cfu	: colony-forming unit (unité formant colonie)
ch	: cheval-vapeur (75 kilogrammes mètre par seconde)
GWh/an	: GigaWatheure par année (3 600 000 000 joules par année)
g	: gramme (= 0,001 kilogramme)
g/L	: gramme par Litre



h	: heure (= 3 600 secondes)
ha	: hectare (= 10 000 mètres carré)
j	: jour (86 400 secondes)
kg	: kilogramme
kHz	: kiloHertz (= 1000 événements par seconde)
km ²	: kilomètre carré (= 1 000 000 mètres carrés)
L	: Litre (= 0,001 mètre cube)
m	: mètre
m ²	: mètre carré
m ³	: mètre cube
m ³ /h	: mètre cube par heure
m ³ /j	: mètre cube par jour
m ³ /s	: mètre cube par seconde
mg	: milligramme (0,000001 kilogramme)
mg/L	: milligramme par Litre
mm	: millimètre (= 0,001 mètre)
mm/an	: millimètre par an
min	: minute (= 60 secondes)
mS/cm	: milliSiemens par centimètre (= 0,001 siemens par 0,01 mètre)
m/s	: mètre par seconde
T	: Tonne (= 1 000 kilogrammes)
tr/min	: tour par minute
V	: Volt (= 1 kilogramme mètre carré par ampère seconde cube)



Devises

€ : Euro (Code ISO 4217 : EUR)

F CFA : Franc des Communautés Financières d'Afrique (code ISO 4217 : XOF/XAF)

\$: Dollar américain (code ISO 4217 : USD)



I. FINDINGS

1.1. Introduction

1.1.1. Context and Justification of the Project

As part of the Ivorian government's policy on access to electricity and in response to the growing electricity needs of Côte d'Ivoire, the company ERANOVE, operator of the CIPREL gas-fired power station in the area industrial plant, plans to extend its electricity production capacity by means of a new power plant. It will be located near the village of Taboth, in the prefecture of Jacqueville, about 800 m south of the Ebrié lagoon, about 30 km west of Abidjan. CIPREL was created in 1995 with the launch in Phase I of a power plant comprising three 33 MW turbines. In 1997, phase 2 followed with 1 GE 9001E 111 MW turbine. Phase 3 of the project (2009) increased CIPREL's production capacity to 321 MW. Phase 4 (2014-2016) by adding a 111 MW gas turbine (TAG 10) and a steam turbine (TAV 1) of 111 MW brings the total power of the plant to 543 MW. All these machines are located on the same site in the Industrial Zone (Z.I.) of Vridi and are capable of running on gas, and from back-up hydrocarbons.

The project which is the subject of this study concerns the construction of the utilities necessary for the operation of the power station and the materialization of their respective rights of way on the ground. The studies will relate to the construction of 1). the asphalt access road from the Avagou to the site of the power station crossing the SICOR. This access route will be used to transport heavy packages and personnel to the plant site; 2) The construction of gas pipes to supply gas to the power station to supply the gas turbine; 3) The construction of a 33 KV MV line to supply electricity to the site for the construction of the power plant and the construction of a gas treatment plant.

1.1.2. Objectives and Methodology of the ESIA

The purpose of the environmental and social impact study is to promote consideration of environmental and social issues at each phase of a project, in order to help the client to design a project that respects the local residents and of the environment. It makes it possible to analyze and interpret the factors of the project which have an influence on ecosystems, natural resources and the quality of life of individuals and communities.

This environmental and social impact study was carried out in accordance with the requirements of Ivorian regulations: it therefore follows an implementation methodology in accordance with Decree No. 96-894 of November 8, 1996 and is based on the bibliographic data available as well as on the information collected on site and from the various stakeholders

1.1.3. Description of the Project

1.1.3.1. Actors of the Project

CIPREL is a public limited company under Ivorian law with a capital of 29.2 billion CFA francs, created in 1994 by decision of the State of Côte d'Ivoire to meet the country's growing energy needs. Located on the rue des textiles in the industrial zone of Vridi in the commune of Port-Bouët, the production site covers an area of almost 75,000 m². With an installed capacity of 556 MW and a 2017 production of 3199 GWh made available to the electricity network, CIPREL is the most powerful thermal power plant in Côte d'Ivoire. It makes every effort to be able to count on the commitment, dynamism and involvement of all its employees, partners and the Board of Directors, and to achieve the achievement of its ambition. As of December 31, 2017, CIPREL was majority owned by ERANOVE, main shareholder since inception, which holds 83.3% of the capital.

The realization of the ESIA was entrusted by CIPREL to INSUCO SARL supported by SGS Côte d'Ivoire, approved for the submission of environmental and social impact studies by the ministry in charge of the environment.

1.1.3.2. Planned Developments



This is the construction project for the works of three (3) utilities and a gas treatment station necessary for the operation of the CIPREL V power plant in Taboth in the department of Jacqueline and the materialization of their respective rights of way on the ground.:

- utility N ° 1: access to the power plant through the deserted site: access to the power plant by way of a paved road from the AVAGOU crossroads to the site;
- utility N ° 2: the gas supply line to the power station to supply the gas turbine: 3 pipes (2 pipes of 12 " and 1 pipe of 4 ") running side by side in a total area of 2 m wide all along the route. The starting point of this gas utility is the existing FOXTROT "winnowing" chamber located on the edge of the asphalt road in Jacqueline, 1 km from the AVAGOU crossroads. The route will be along the road to the Avagou - Taboth junction between the PETROCI pipe and the road (4m from the asphalt road,) then gradually reduced to 2.5m when approaching this junction.
- utility N ° 3: Power supply to the plant site for construction: This involves tapping on the existing 33KV line supplying TABOTH to supply the plant;
- and a gas treatment plant of the combined cycle thermal power plant

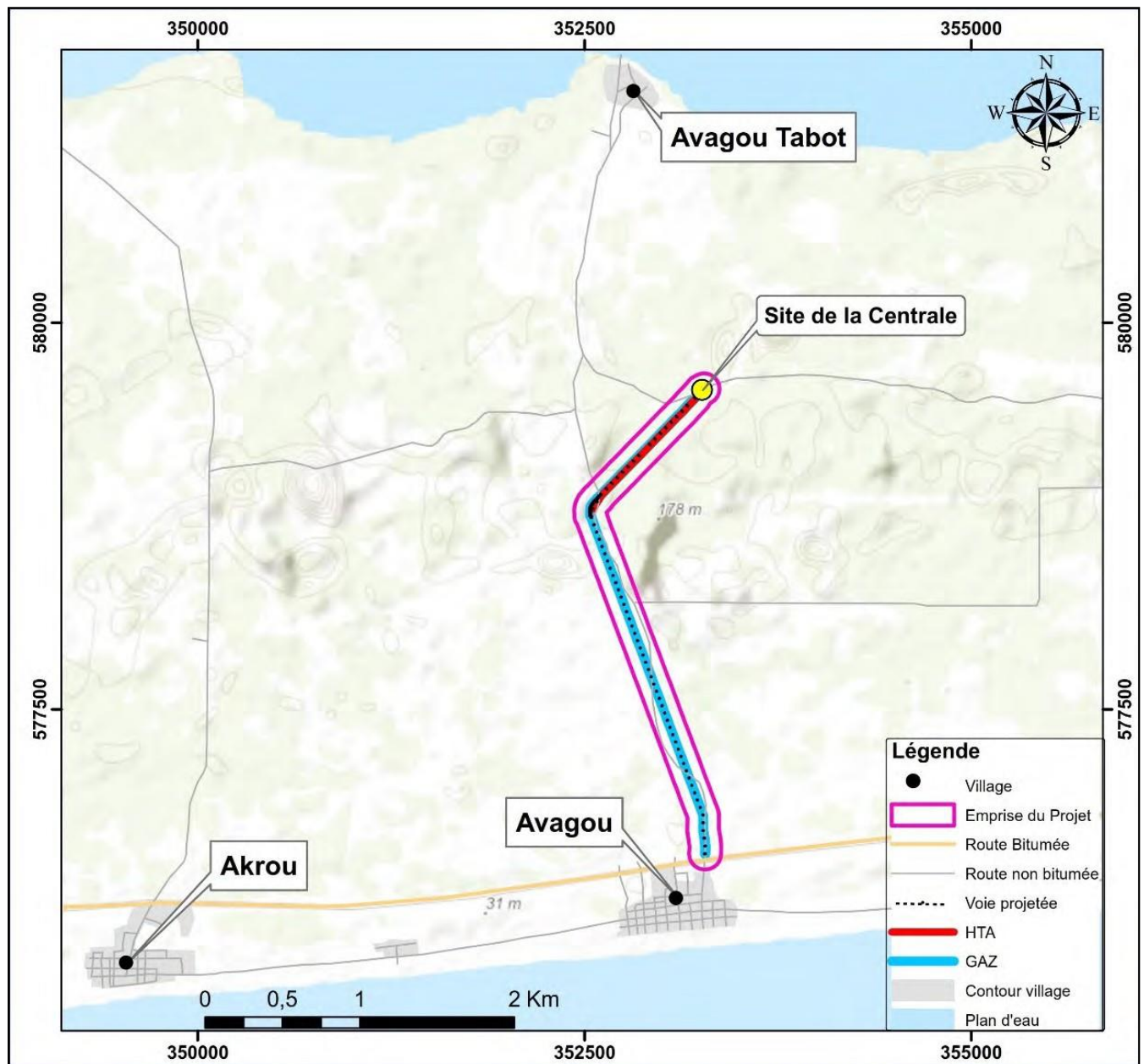
1.1.3.3. Location of the Project

The project area consists of a linear and a fixed site. The linear portion of the project starts from the existing "winnowing" chamber FOXTROT located on the asphalt roadside of Jacqueline at 1 km from the AVAGOU crossroads passing through the village of Avagou to go to the planned site of the power plant on a corridor of about 5.5 km. The forecast footprint of the linear component (road + gas pipes) is 30 m. This line crosses banana plantations, cassava fields, papaya plants, pineapple field, private coconut plantation and SICOR and swampy areas. The fixed site concerns the construction area of the gas treatment station which is planned on the site of the plant. The figure below shows the geographical location of the project area and the photos below show the appearance of the immediate surroundings of the project area





Carte 1-1: Présentation du site d'implantation du projet et les infrastructures projetées



1.1.3.4. Phases of development of construction, operation and cessation of activities

1.1.3.4.1. Activities in the planning phase for the construction of utilities and the gas treatment plant

These are essentially preliminary activities before the start of work and which relate to the following tasks :

- Installation of the site facilities for the enterprise ;
- the mobilization in the work area of the machines, machinery and equipment necessary to start the site;
- recruiting laborers and qualified personnel;
- Searching and preparing of appropriate areas for materials and deposits necessary for the realization of the projects;

- markup of the works area;
- the clearing and preparation of the works right-of-way..

1.1.3.4.2. Activities in the construction phase of the utilities and the gas treatment station

This phase is the stage of effective completion of the work. These are earthworks and right-of-way clearance, track construction, installation of gas pipes, the MV line and construction of the gas treatment station. During this phase we also have the exploitation of quarries and depot sites, the movement of earth-moving machinery and trucks for transporting materials.

1.1.3.4.3. Activities in the operations phase

The operation phase is the commissioning of the utilities and the gas treatment station. In addition to the circulation of vehicles, vehicles and pedestrians, it will be carried out by operating periodic maintenance and inspection work to detect and correct problems on the installations put in place

1.1.3.5. Planning of the project

The works will take 18 months until the start of the operating phase

1.2. Baseline State of the Environment

1.2.1. Physical Environment

If we consider the parameter of total suspended particles, the air in the project area is relatively good and the pollution present is more of natural origin than anthropogenic.

The noise levels reached between day and night are all higher than the limits recommended by IFC. The nature of noise is both natural and anthropogenic.

The analyzes made on the wells of the area during the present study show microbiological contamination of these underground waters and a degradation from the point of view of heavy metals in particular

1.2.2. Biological Environment

The project site is relatively far from the nearest protected areas and is not in ecological connectivity with the closest.

The habitats encountered in the study area are greatly disturbed or even modified by anthropogenic activities.

The floristic diversity of the site is low, as are its conservation challenges.

In addition, the vegetation is very fragmented and in a state of advanced degradation due to anthropization (the notorious presence of food and perennial crops).

The site represents little interest for the conservation of mammals given the rarity and the low diversity of its fauna. The mammals have gradually left the area, or even disappeared due to the anthropic pressure exerted on the site. None of the mammal species listed as having special status in the study of the area made in the plant's ESIA is found on the route of the route for this project. The same is true for other types of local wildlife species

1.2.3. Human Environment

Two villages are concerned with the project site, Avagou and Taboth.

The village of Avagou is of modern type, its habitat is strongly represented by houses of modern type. But traditional types of construction (construction with precarious materials: mud and / or bamboo covered with straw) are also present. We meet constructions with modern materials (cement and sheet metal) with medium standing dwellings and low standing dwellings.



Populated by 1695 inhabitants according to the RGPH 2014, the village is endowed with a minimum of infrastructure and collective equipment in particular, a rural health center, a primary school, running water (SODECI), electricity places of worship, a bus station, etc.

The main activities which provide sources of income to the population is agriculture and sea fishing although it is strongly dominated by non-natives. As for trade, it is dominated by the sale of agricultural and fishery products although women are more involved in the processing and marketing of cassava.

The land is held by a chief of land who is the moral guarantor. The land belongs to families whose management is the responsibility of the head of the family. However, the head of the family can only temporarily transfer the land to a third person or another family member for food needs. The sale or the final transfer of the land of a family is done in agreement with all the members of the family with the implication of the chief of land and the village.

Taboth is also a modern village. Its habitat is represented by modern type houses. We meet constructions with modern materials (cement and sheet metal) and dwellings of medium and low standing. Populated by around 801 inhabitants according to the RGPH 2014, the village does not have a health center. For health needs, the population goes either to Avagou or to Jacqueville. Outside the health center, some infrastructure and collective equipment have been recorded in the said village, in particular, a primary school, a water tower and a village water supply, electricity for places of worship, etc.

The main activities that provide sources of income for the population are agriculture and lagoon fishing. As for trade, it is dominated by the sale of agricultural and fishery products although women are more involved in the processing and marketing of cassava.

The land is held by a chief of land who is the moral guarantor. The land belongs to families whose management is the responsibility of the head of the family. However, the head of the family can only temporarily transfer the land to a third person or another family member for food needs. The sale or the final transfer of the land of a family is done in agreement with all the members of the family with the implication of the chief of land and the village.

1.3. Analysis of Impacts and Mitigation Measures

1.3.1. Physical Environment

1.3.1.1. Potential raw impacts

The potential impacts known as "gross" correspond to the modifications made to the natural and human environment, in connection with the project, without considering any measure to avoid, reduce or compensate for these effects.

During construction, the main potential negative impacts on the physical environment are those concerning noise, vibrations and exhaust dust and fumes throughout the duration of the work.

In addition to these main impacts, we can also cite: landscape modification. The deterioration of the quality of soils and subsoils as well as surface water and groundwater by liquid discharges from the project facilities (discharge of used water, hydrocarbons, chemicals, etc.), waste produced as well as accidental situations (fuel leak in the works phase for example).

The risk of degradation of groundwater and surface water, by effluent discharges (waste water, washing water from construction equipment), the production of waste, the use of certain dangerous liquid products (oil, fuels, painting, etc.).

The suspension of dust by the circulation of gear as well as the noise generated.

During the operation phase, the potential impacts will be more limited because the planned installations emit few discharges; it will mainly involve risks of degradation of ground and surface water, through the storage and use of dangerous chemicals, the production of sanitary effluents.



1.3.1.2. Mitigation Measures

The implementation of measures to control the project's impacts on the natural and human environment makes it possible to reduce the potential consequences to a so-called residual level. Among the technical and organizational measures planned, we can cite:

- Various measures to reduce noise, vibrations and dust and atmospheric emissions, among which, limiting the noisiest work to daytime schedules, equipping vehicles and silencing machines that meet the standards in terms of noise emissions, watering the site, etc.
- The protection of water resources by setting up a concrete / waterproof area for the storage and handling of chemicals and hydrocarbons, the removal of ordinary and industrial waste by structures approved by CIAPOL or ANAGED. The implementation of a waste and nuisance management plan.
- The implementation of mitigation measures will reduce the residual severity of the majority of impacts to negligible or minor levels.

1.3.2. Biological Environment

1.3.2.1. Potential Raw Impacts

During the construction phase, the main potential negative impacts on the biological environment are as follows:

The impact on the flora and the residual natural habitat given the strong anthropization of the area, due to the clearing of rights-of-way and the risk of contamination of the environment by the discharge of wastewater, the production of waste and accidental situations .

The impact on the residual fauna, for the same reasons as above, to which are added the risk of poaching by site personnel and the disturbance linked to noise and the physical presence of machines and workers.

The operation phase presents only low potential impacts (minor or negligible).

1.3.2.2. Mitigation Measures

The potential negative impacts of the project on the biological environment will be managed by a set of measures, making it possible to reduce the environmental effect to a residual level, the most important of which are the following:

- The delimitation and marking of the site's rights-of-way. The sectors on which no development is planned (neither in the construction phase nor in the operational phase) will be clearly identified and their access prohibited in order to work within the spatial limits of the project.
- The conservation of trees present in the project right-of-way, as far as possible
- The ban on the use of phytosanitary products for clearing the site (mechanical clearing only).
- Raising awareness of all the site stakeholders on ecological issues at local level (fauna) and on the nature of the environmental prescriptions that will be implemented.

The implementation of mitigation measures will allow the residual severity of all impacts to be reduced to negligible or minor levels, except for flora and natural habitat under construction, due to the permanent nature of these impacts.

1.3.3. Human Environment

1.3.3.1. Potential Raw Impacts

In terms of the human environment, the potential impacts correspond to the quality of the sound climate originating from the movement of site vehicles and machinery which will bring about a modification of the natural and human environment in connection with the project, without considering any avoidance, reduction or compensation of these effects.

During the planning and construction phase, the main potential negative impacts on the human environment are those concerning noise, vibrations, dust, exhaust fumes throughout the duration of the work .



In addition to these main impacts, we can also cite: the destruction of agricultural property in the planning phase and loss of income, as well as the final occupation of the land.

The destruction of coconut and cassava farms will cause permanent or partial loss of income for some responsible farms.

The permanent occupation of the land will cause a partial loss of the family land heritage.

L'occupation définitive du domaine foncier va engendrer une perte partielle du patrimoine foncier familiale

During the works, the existing road traffic will experience a significant disruption due to the importance of the activities. This disturbance could result in significant road safety risks for road users due to the presence of machines on the track and the fact that these development works are under traffic.

1.3.3.2. Mitigation Measures

During the project implementation phase, several measures are to be implemented in order to mitigate the potential impacts listed above. The most important measures are:

- Limit the opening works in the project right-of-way: during the opening phase of the project right-of-way, the destruction of agricultural property must be limited only to the personal and identified property in order to avoid impacting other people located in the vicinity of the work site ;
- Compensate people affected by the project: the development of the track will lead to the loss of economic activities located in the right of way of the project. These main impacts will have to be the subject of compensation procedures up to the amount of the damage suffered, according to the regulatory provisions in force in Côte d'Ivoire and the recommendations of the World Bank .
- Use good quality machinery and equipment that emits little noise ;
- Limit noise emissions as much as possible and as a preventive measure insofar as this is technically feasible ;
- Identify the areas of emergence of noise pollution and take all the necessary measures both in terms of the organization of the site and in terms of the equipment used ;
- Avoid work that is a source of loud noise during rest hours, especially at night .

1.4. Public Consultations

Stakeholder Participation

Stakeholder consultation is instituted by Decree No. 96-894 of November 8, 1996 determining the rules and procedures applicable to studies relating to the environmental impact of development projects. It stipulates in its Article 35 that "The public has the right to participate in all procedures and decisions that could have a negative effect on the environment".

It includes the following aspects: prior information to authorities and communities, consultation with those affected by the project and the public inquiry. This public participation procedure makes it possible to present the project to the participants, to assess the impacts on the human environment and to collect the concerns and opinions of those affected

The consultation made it possible to:

- ✓ provide the actors concerned with fair and relevant information on the project, in particular its objectives, the consistency of the planned works, the potential, negative and positive impacts as well as the related mitigation measures ;
- ✓ invite them to give their opinions and concerns on the project under study (needs, expectations, fears, suggestions and proposals for solutions) as part of an informative and participative dialogue between them and the project promoter's representatives ;
- ✓ agree in a concerted manner on the actions planned by the project and in particular on the measures to be envisaged to deal with potential negative impacts.

This public participation procedure made it possible to present the project to the populations concerned and to assess with them the potential impacts on the human environment.



- Methodology adopted as part of the public consultation process

The methodology adopted is the participatory approach attentive to the concerns of the populations concerned. Within the framework of this project, three (03) meetings of information, exchanges and discussions around the activities were engaged including one (01) public consultation made it possible to take into account the needs and realities of the beneficiary environment and two (02) community consultations to involve the communities of Avagou and Taboth. The tools used are semi-structured interviews and focus groups to allow the interlocutors to freely give their opinions.

- Meeting of different stakeholders

This approach enabled the consultant to meet all the different social categories of the project stakeholders. It is a question of presenting the mission and the utilities to build for the operation of the CIPREL thermal power plant; present the impacts and mitigation measures; collect the opinions of the parties, their expectations and fears regarding the completion of the project.

The consultant met with all social categories during the field mission: these are the prefectural body (prefect and sub-prefect), the directors and heads of departments of technical departments, local authorities (town halls), authorities customaries (village chief), youth and religious leaders (youth president and Imam) and also those affected by the project.

In summary, the ESIA was carried out in consultation with all of the stakeholders. The various meetings held within the framework of public consultations revealed that the project enjoys very high social acceptability. Indeed, the necessary remark is that the different categories of actors are unanimous in recognizing the project is a vector of development for the department and the surrounding localities

1.5. Summary of Project Impacts

Tableau 1-1: Summary of Project Impacts

Phase of the Project	Potential Impacts
Site Development	<ul style="list-style-type: none"> - Physical Environment: <ul style="list-style-type: none"> o Air Pollution o Soil erosion o Risk of soil pollution o Risk of pollution of water resources o Silting of marshy areas o Modification of the landscape - Biological Environment: <ul style="list-style-type: none"> o Deforestation and destruction of vegetation o Loss of plant diversity and modification of the facies and structure of woody and herbaceous vegetation o Forced Migration of fauna - Human Environment : <ul style="list-style-type: none"> o Noise and vibration o Temporary reduction in number of unemployed o Improvement of purchasing power and socio-economic conditions o Loss of farm income o Financial gain for landowners o Risks of contracting various diseases by local residents o Risk of exposure to STIs, HIV/AIDS o Impairment of the quality of living conditions o Risk of encroachment on archaeological sites o Gender discrimination during recruitment o Traffic disruption o Damage to worker's health and exposure to accidents at the worksite o Risk of social conflict
Construction of structures and installation of equipment	<ul style="list-style-type: none"> - Physical Environment : <ul style="list-style-type: none"> o Air pollution o Noise and vibration o Soil erosion o Risk of soil pollution o Risk of pollution of water resources o Silting of marshy areas



Phase du projet Impacts potentiels

- Modification of the landscape
- Biological environment :
 - Forced migration of the fauna
- Human Environment :
 - Temporary reduction in the number of unemployed
 - Improvement of purchasing power and socio-economic conditions
 - Risks of contracting various diseases by local residents
 - Risk of exposure to STIs, HIV/AIDS
 - Impairment of the quality of living conditions
 - Risk of encroachment on archaeological sites
 - Gender discrimination during recruitment
 - Traffic disruption
 - Damage to worker's health and exposure to accidents at the work site
 - Risk of social conflict
 - Acceleration of road deterioration from use

1.6. Synthèse des mesures d'atténuation

Tableau 1-2: Synthèse des mesures proposées

Phase du projet	Mitigation Measures
Site Development	<ul style="list-style-type: none"> - Physical Environment: <ul style="list-style-type: none"> ○ Water the site in dry periods to reduce the suspension of dust ○ Use machines and equipment of good quality and emitting little noise ○ Limit the stripping of the surface layers to the necessary proportions ○ store and transport fuel and oils in tight containers ○ Emptying vehicles and machines in stations equipped for such operations ○ Stop all earthwork near a body of water during the period of heavy rain ○ Respect the weight of the axle loads - Biological Environment: <ul style="list-style-type: none"> ○ Replace destroyed vegetation by reforestation in the project area ○ Give priority to areas with low floristic value - Human Environment: <ul style="list-style-type: none"> ○ Sensitize local residents and employees on the fight against poaching



Phase du projet	Mesures d'atténuation
Construction of structures and installation of equipment	<ul style="list-style-type: none"> ○ Recruit the local workforce when they have the required qualifications ○ Supervision of restoration activities around the site, in terms of quality; ○ Consider compensating the owners according to Ivorian regulations and think of support measures allowing them to set up other activities. ○ Purge the plot according to the law on the purging of customary rights in force ○ Sensitize local residents and site staff on the prevention of STIs / HIV / AIDS ○ Put garbage bins at the site headquarters and waste bags in vehicles and build toilets ○ Equal opportunities for all during recruitment, men and women
	<ul style="list-style-type: none"> – Physical Environment : <ul style="list-style-type: none"> ○ Water the site in dry periods to reduce the suspension of dust ○ Use machines and equipment of good quality and emitting little noise ○ Limit the stripping of the surface layers to the necessary proportions ○ Store and transport fuel and oils in tight containers ○ Emptying vehicles and machines in stations equipped for such operations ○ Stop all earthwork near a body of water during the period of heavy rain ○ Respect the weight of the axle loads: – Biological Environment : <ul style="list-style-type: none"> ○ Replace destroyed vegetation by reforesting in the project area ○ Give priority to areas with low floristic value – Human Environment: <ul style="list-style-type: none"> ○ Sensitize local residents and employees on the fight against poaching ○ Recruit the local workforce when they have the required qualifications ○ Supervision of restoration activities around the site, in terms of quality; ○ Sensitize local residents and site staff on the prevention of STIs / HIV / AIDS ○ Put garbage bins at the site headquarters and waste bags in vehicles and build toilets ○ Equal opportunities for all during recruitment, men and women



Phase du projet	Mesures d'atténuation
Operations	<ul style="list-style-type: none"> - Physical environment: <ul style="list-style-type: none"> ○ Water the runway during dry periods to reduce set-up dust suspension ○ Use good quality and low emission vehicles noises ○ Arrangement of anti-pollution kits (absorbent products, containment equipment) for operators, previously sensitized and trained in their use - Biological Environment: <ul style="list-style-type: none"> ○ Put in place facilities / equipment to deter birds from perching or nesting on electricity pylons ○ Move invasive exotic species if they are identified on the route -Human Environment <ul style="list-style-type: none"> ○ Offer the possibility to local authorities to improve their service offer to the populations and guarantee them security ○ Sensitize the population living near utilities on the dangers linked to power lines and gas pipelines ○ Put traffic signs near residential areas (about 100 m). ○ Raise awareness of residents and transporters on the consequences of speeding ○ Recruit the local workforce when they have the required qualifications ○ Authorize only trained and certified workers to install, maintain or repair the line and pipeline

