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Union – Discipline - Travail

AGENCE NATIONALE DE L'ENVIRONNEMENT



CLEAN DEVELOPMENT MECHANISM NATIONAL AUTHORITY
COTE D'IVOIRE

**ELECTRICITY EMISSION
FACTOR AND SECTORAL
WORKSHOP ON ENERGY**
EC-ACP-MEAS PROJECT

In Partnership with:

**UNEP
RISØ
CENTRE**
ENERGY, CLIMATE
AND SUSTAINABLE
DEVELOPMENT

ACP MEAS





Picture 12: Plenary session– Workshop on Energy sector and emission factor

1. PREPARATION PHASE

This workshop planned for mid-December 2010 has finally been rescheduled for 19 and 20 January 2011 because of the socio-political situation.

The main difference with the other activities lies in the fact that two activities were combined in one activity. It is about the activity "determination of the national grid emission factor » and activity « Sectoral workshop on Energy ». Indeed, the reason of this combination is due to the insufficient financial amount of money allocated to the sectoral workshop; in addition, aware of the involvement of the same stakeholders in the same activities, it appeared to us the necessity to combine the two activities in order to benefit from the allocated amount for one of the two activities to offset the deficit of the other. Thus, we will save time considering the planned agenda.

Like the other activities, preparations were about:

- Development of terms of reference
- Development of the Workshop Agenda
- Identification and finalization of the list of participants: The selection of participants was made on the basis of their membership in the energy sector. Then, the Energy project proponents listed on the CDM projects portfolio of Côte d'Ivoire were also invited. A number of Sixty-five participants (65) was arrested with the participation of key companies like the Directorate General of Electricity and Hydrocarbons with four representatives.
- Preparation of communications: The CDM DNA has contacted several people resources to make presentations. These individuals were selected among the companies belonging to the Designated National Authority under the relevant regulations. These are among other companies, BNETD represented by Mr. KOUMOIN Arkadius, and Mr. N'CHO Pacôme from the Directorate General of Electricity. These people are experts in energy within their respective department.
- The selection of the main consultant in the person of Mr. KASSI Bagaman was made on the basis of his membership in the Ivorian Company of Electricity Operation (SOPIE) and secondly his involvement from the beginning in CDM. As such, he had conducted missions on CDM abroad on behalf of its company (see resumes).

2. WORKSHOP PROCESS

The National Authority for Clean Development Mechanism (CDM-DNA) which aims to promote CDM projects provides support to energy sector stakeholders, through a broad awareness on CDM. Thus, to help project developers, including those of the energy sector in assessing the amounts of CO₂, the CDM DNA hired a consultant to determine the national grid CO₂ emission factor.

It is in this context that the DNA held from January 19 to 20, 2011 at the Hotel Residence Riviera Attoban Manhattan, a workshop to validate the grid emission factor of Côte d'Ivoire and build capacity of experts from energy sector under the CDM.

a. Objectives of the workshop

The workshop objectives are:

- Training of participants on the functioning of CDM and the preparation of basic documents (PIN, PDD);
- Presentation of potential CDM projects in the energy sector;
- Mobilization and consultation with various Energy stakeholders so as to identify the roles and responsibilities in the CDM in order to make emerge and register CDM projects and encourage the further implementation of an Institutional and regulatory framework on bio-energy and renewable energy;
- Validation of the electricity grid emission factor in Côte d'Ivoire.

b. Organization of the workshop

b.1 Opening ceremony

It revolved around three speeches made successively by Rachel BOTI-DOUAYOUA, National Authority for Clean Development Mechanism (CDM-NA), Mr. Jacques KOFFI, Assistant Director in charge of international and economical affairs at ANDE, representing Mr. Director of ANDE, and Professor OCHOU Abe Delfin, Director General of the Environment, representing the Minister of Environment, Waters and Forests, Mr. Lazare KOFFI Koffi.

In her speech, Ms. DOUAYOUA, said words of welcome to the participants before setting the context for that workshop. Indeed, most projects under the CDM have energy component, so the need to strengthen the capacity of project proponent in the energy sector. Also, the importance of this area has permitted to undertake a study to calculate the emission factor of the Ivorian grid. Therefore, before concluding her remarks, she wished that this factor be validated to allow better quantification of carbon emissions under the CDM.

Following the CDM DNA, Mr. Jacques KOFFI representing the Director of ANDE, Professor Joseph SEKA SÉKA, apologized him before the distinguished participants for his absence. He also noted the importance of this workshop before encouraging participants to be diligent in working to achieve different goals set.

Ending series of speeches, Professor OCHOU, has conveyed the gratitude of the Minister of Environment, Waters and Forests he represented. He noted the essential nature of the emission factor in the key sector of the energy sector. Facing the difficulties encountered in recent times in this sector, particularly those related to electricity shortage, the State has embarked on a process of diversification of energy sources. The validation of an emission factor in that sector will facilitate the quantification of GHG emissions. He therefore called on participants to efficiently contribute to this workshop because of its importance. He ended his speech by declaring open the workshop and also thanking the organizers for the holding of this workshop.

b.2 Establishment of the chair committee

A meeting bureau was set up to lead discussions during the workshop. It was composed as follows:

- Mr. Guillaume ZABI, General Inspector of Environment, Chairman;
- Mr. Raoul KOUAME, Assistant to the Climate Change Focal Point, Reporter;
- Mr. Jean-Stéphane DAINGUY, Legal Affairs Officer for the CDM DNA, Reporter.

After the establishment of the bureau, presentations focusing on CDM projects and determining the emission factor of the Ivorian grid were made.

c. Working Session

The workshop was conducted in two phases. The presentations were followed by discussion sessions and working groups.

c.1 Presentations

Four presentations were made during this phase:

- The first presentation was made by Mrs. Rachel BOTI-DOUAYOUA, coordinator of the CDM DNA on the “**CDM overview and the CDM assessment in Côte d'Ivoire: the case of the energy sector**”.

It appeared from his statement that the Clean Development Mechanism is a tool in the fight against climate change. She recalled that the origin of the CDM has resulted in its legal basis is the United Nations Framework Convention on Climate Change and the Kyoto Protocol. The CDM is based primarily on financing projects that reduce emissions of six (6) greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbon, perfluorocarbon, and sulfur hexafluoride) in developing countries by industrialized countries. She also noted that the majority of CDM projects in Côte d'Ivoire are in relation with the Energy sector. Hence the need to strengthen the capacity of stakeholders and make efficient promotion of CDM projects proponents who need better control the various stages of project validation.

- The second presentation was made by Mr. N'CHO Pacôme, Research Officer in the General Department for Energy, on the CDM and the energy sector in Côte d'Ivoire.

It is learned from this presentation that Côte d'Ivoire has major strengths in terms of energy through hydro and thermal power plants, no need to mention its great potential in renewable energy such as solar, biomass but also all sites across the country waiting for a possible exploitation. An institutional and regulatory framework organizes the energy sector. However, in order to ensure economic and financial viability of the Energy sector, he made the following proposals to close his presentation:

- adapt legislation to new challenges and constraints in the energy sector;
- practice good governance and transparency through the establishment of a genuine independent regulatory authority for the various sectors;
- optimize the institutional framework for electricity sector, including responsibilities of key players;
- Implement Programs and Projects of Renewable Energy and Energy Efficiency;
- develop a Code of energy.

○ The third presentation was made by Mr. KOUMOIN Arkadius, Engineer at BNETD (Bureau National d'Etudes Techniques et de Développement). It focused on "procedures for CDM project development and presentation of the Energy Paper Project Idea Note (PIN)".

The major themes that have made his presentation were:

- Overview of the CDM,
- CDM project development,
- Methodologies for calculating the baseline and
- Presentation of a PIN template.

He explicitly addressed all these points which enabled participants to better understand the procedures for developing CDM projects.



Picture 13: Presentation by Mr. KOUMOIN (speaker)-Workshop on Energy sector and emission factor

○ The final presentation of this workshop was made by Mr. KASSI Bagaman, Consultant committed to the study about the determination of the grid emission factor in Côte d'Ivoire. He focused on presenting the results of his study.

After presenting the bibliography used in the study, the consultant gave the goals. It was essentially to give through this emission factor, a tool that will facilitate CDM project promoters, quantification of GHG emissions that could be avoided through a CDM project. He then explained the methodology used and assumptions made that have helped to get the desired result. The use of this methodology allowed him to propose the CO₂ emission factor of the national grid which is 0.52 téqCO₂/MWh.

He closed his remarks with recommendations and a sample application of this factor.

Following these presentations, discussions were held. These have allowed participants to ask questions of understanding and make contributions to exhibitors. The latter responded with satisfaction to all these questions that have helped to improve their level of understanding of procedures for developing CDM projects.

Regarding the presentation on the emission factor, constructive contributions were made to the consultant to improve the document. Following the exchange, he was asked to align its views with the participants' ones who were likely to improve with their analysis the

methodology. The validation of the proposed emission factor has been made after that harmonization based on calculations made from the operating balance of the electricity grid of Côte d'Ivoire. Thus, the CO₂ emission factor is as follows:

- 0.79 teqCO₂/MWh, without leakage
 - 0.67 teqCO₂/MWh with leakage
- Leakage is estimated to be 0.12 teqCO₂/MWh.

c.2 Training of working groups

Three working groups were formed on different themes.

Group 1: Renewable energy: renewable biomass and production

Group 2: Combined Cycle

Group 3: Energy Efficiency



Picture 14: Working group session - Workshop on Energy sector and emission factor

c.3 Results of the work

Working groups have aimed to train participants to complete a PIN. At the end of work, each group was able to complete a PIN with a specific title of project:

Group 1: Valorization of household waste by methanization to produce electricity;

Group 2: Improvement of energy efficiency through a combined cycle;

Group 3: Energy Efficiency in a brewery through energy saving.

Such completed PINs were presented by the different groups. Following these presentations, comments were made by some participants to help groups improve their PIN. The Chairperson recommended that these comments to be written and transmitted to the related groups.

d. Closing ceremony

The closing ceremony has recorded two speeches, one of Ms. DOUAYOUA and Mr. Jacques KOFFI representing the Director of ANDE.

Ms. DOUAYOUA thanked the participants for their effective presence and their interest in the workshop on capacity building and knowledge of the Clean Development Mechanism.

Mr. Jacques KOFFI also thanked the participants of the workshop. He hoped that the determination of the CO₂ emission factor of the electricity grid in Côte d'Ivoire will be an effective tool in setting up CDM Energy projects.

Mr. Guillaume ZABI, on behalf of the Minister of Environment, Waters and Forests, Mr. KOFFI Koffi Lazare thanked the organizers and participants for their presence despite the difficult situation. He confirmed that Côte d'Ivoire now has its emission factor of electricity grid in the CDM. Finally, he declared closed the workshop on capacity building of energy sector experts and validation of CO₂ emission factor of the electricity grid in Côte d'Ivoire.

Table 11: Agenda- Workshop on the validation of the electricity grid CO2 emission factor and sectoral workshop on energy sector

Date : Wednesday 19 to Thursday 20 January 2011

Venue : Manhattan Suites, Riviéra Attoban

AGENDA

DAY 1		
TIME	ACTIVITIES	SPEAKERS
8 :30-9 :00	Welcome and registration	
9 :00-9 :10	Welcome from CDM Coordinator	Rachel BOTI-DOUAYOUA
9 :10-9 :20	Word of the Director of ANDE	Prof. SEKA SEKA Joseph
9 :20-9 :30	Opening speeches of the workshop by the Minister of Environment, Waters and Forests	
10 :00-10 :20	Coffee break	
11 :20-11 :45	Background on CDM and the CDM record in Côte d'Ivoire: Case of the energy sector	Rachel BOTI-DOUAYOUA
11 :45-12 :10	CDM and energy sector in Côte d'Ivoire	Direction Générale de l'Electricité
12 :10-12 :30	Procedures for developing CDM projects and presentation of Energy document Project Idea Note	KOUMOIN Arkadius, BNETD
12 :30-13 :00	Exchanges et Discussions	Moderator
13 :00-14 :15	Lunch Break	
14 :15-15 :00	Presentation of the report on the electricity grid emission factor calculation in Cote d'Ivoire	KASSI Bagaman, Consultant
15 :00-16 :00	Exchanges and Discussions and adoption of the emission factor of electricity grid in Cote d'Ivoire	Moderator
16 :00-16 :20	Coffee Break	
16 :20-16 :30	Establishment of working groups Group 1: Renewable Energy: Renewable and biomass energy production Group 2: CFL Group 3: Combined Cycle Group 4: Energy Efficiency	
16 :30-17 :30	BEGINNING OF THE WORK GROUP	
17 :30	END OF DAY 1	
DAY 2		
8 :00-10 :00	CASE STUDY – WORKING GROUPS	
10 :00-10 :20	Coffee Break	
10 :20-13 :00	CASE STUDY – WORKING GROUPS	
13 :00-14 :30	Lunch Break	
14 :30-15 :30	RESTITUTION OF WORKING GROUPS	
15 :30-16 :00	Coffee Break	
16 :00-16 :20	Wrap-up session	
16 :20-17 :00	Closing ceremony	
17 :00	END OF DAY 2	

Table 12: List of attendance-Workshop on the validation of the electricity grid CO2 emission factor and sectoral workshop on energy sector

Wednesday 19 to Thursday 20 January 2011

N°	NOM ET PRENOM	STRUCTURE	FONCTION	TEL	E.MAIL
1	OCHOU ABE DELFIN	MINEEF	DIRECTEUR GENERAL DE L'ENVIRONNEMENT	08260809	ochoud@yahoo.fr
2	GUILLAUME ZABI	MINEEF	IGE	05849416	gzabi01@yahoo.fr
3	ABE AKE LAZARE	MT/Direction Générale des Affaires Maritimes et Portuaires	CHARGE D'ETUDE	07966889	akelazare@yahoo.fr
4	KOUAME KONAN RAOUL	Point Focal CHANGEMENT CLIMATIQUE	ASSISTANT	07982823	raoulkouame@yahoo.fr
5	KONE AMADOU	PETROCI	GESTIONNAIRE RISQUE	05021519	anmkone@petroci.ci
6	ZOUZOUA EDMOND	ANDE	S /DIRECTEUR	07879504	ezouzoua@yahoo.fr
7	GUERO ANGE	ENVIR'MANIA	PROJECT MANAGER	05259166	gueroserge@yahoo.fr
8	KOUADIO LOGUI	AGRI DADJE	CHARGE D'ETUDE	05776528	claudeklogui@yahoo.fr
9	GNECLIE MAHI ALAIN	AGRI DADJE	CHARGE D'ETUDE	08355703	gneclie@yahoo.fr
10	KASSI BAGAMAN	SOPIE	CS	20206245	bkassi@sopie.ci
11	BILE MOTCHIAN	ENVIR'MANIA	D G	05979748	bilemotchian@yahoo.fr
12	KOUMOIN ARKADIUS	BNETD	C E	01043217	koumoinarkadius@yahoo.fr
13	DJA LUCIEN	MINEEF/IGES/FCC	COORDONNATEUR POINT FOCAL	05924488	lucijenda@yahoo.fr
14	DOUDOU LIBRONO HENRI	AGRI DADJE	ASSISTANT DIRECTEUR	01050352	henri_zebody@yahoo.fr
15	EBA FRANK	SIFCA	DIRECTEUR	21757502	ebafranck@yahoo.fr
16	YBOUUE KACOU	Direction Générale des Hydrocarbures	CHARGE D'ETUDE	03760661	yobdalooa2006@yahoo.fr
17	DADJE HOUO	AGRI DADJE	DIRECTEUR	07380338	dadjehouo01@yahoo.fr
18	KOUTOUA CLAUDE	Compagnie Ivoirienne de l'Electricité/SODECI	DQSE	21233625	ckoutoua@yahoo.fr
19	KOUAHO LEOPOLD	ANDE	CT	07976075	
20	NGORAN NORBERT	BNETD	CHEF SECTEUR ENERGIE	01288366	Ngoran_norbert@yahoo.fr
21	NDORI MAURICE	Direction Générale de l'Electricité	RESPONSABLE CELLULE PROJETS	02060693	mauricendori@yahoo.fr
22	KOFFI KOUASSI JACQUES	ANDE	SOUS DIRECTEUR	22432310	jacqueskoffi2@yahoo.fr
23	HIEN SANSAN	CIPREL	CHEF DE SERVICE PGVT RESPONSABLE QSE	07045548 21236293	shien@ciprel.ci 0
24	YANGUE HERVE	MME/ Direction Générale des Hydrocarbures	SOUS DIRECTEUR	09868576	yanghero@yahoo.fr
25	YAO AMANI pascale	ADERCI	DGA	08146815	Bionol_ci@yahoo.fr
26	KROU HENRI PEPIN	ANARE	CT	07004500	hprou@anare.ci
27	KOUHOU ARMAND	PETROCI	INGENIEUR	40332622	akouhou@petroci.ci
28	KOUADIO KOUAME FELIX	MME/DGE	S /DSCP	07545616	kouakouafel@yahoo.fr
29	OMEPIEU DIEGO ARMAND	Direction Générale de l'Electricité	BEE	48629909	Odas1983@yahoo.fr
30	SOUMAHORO YSSOUF	ANDE	CHARGE D'ETUDE	05941763	
31	N'CHO PACOME	Direction Générale de l'Electricité	DENR	05055616	guesnchopac@yahoo.fr
32	YAVO NICOLAS	DISA	CHARGE D ETUDE	05925928	yavo_nicolas@yahoo.fr
33	KONAN JACQUES	BUREAU VERITAS		03111117	jacques.konan@ci.bureauveritas.com
34	DEGRI ANTOINE	ADERCI	DG	07010830 04004467	degriantoine@yahoo.fr
35	RACHEL BOTI DOUAYOYA	AN-MDP	COORDONNATEUR	22 43 23 19 01032895	rbdouayoua@gmail.com
36	ANDBLE-YAO CHRISTIAN	AN-MDP	CHARGE DE LA PROMOTION	22 43 23 10	scay067@yahoo.fr
37	GERARD DEBLEZE	AN-MDP	CHARGE DES RELATION	22 43 23 10	gerarddebleze@yahoo.fr

	AMANI		EXTERIEURS		
38	DAINGUY STEPHANE	AN-MDP	JURISTE	22 43 23 10	dainguystephane@hotmail.fr
39	OTHCONI GERMAINE	ANDE	ASSISTANTE DIRECTEUR	05876217	germyotchoni@yahoo.fr
40	PIERRE DJOKOI	ANDE	CHEF DE SERVICE	01050986	Pierredjokoi2006@yahoo.fr
41	ASSI JEAN ELYSEE	PETROCI	INGENIEUR ENVIRONNEMENT	40332622	assijelysee@yahoo.fr
42	AGBARA ERIC	MINEEF	CHARGE D'ETUDE	20223029	erikagbara@yahoo.fr
43	ASSI JULES	ANDE	CHARGE D'ETUDE	07129534	Julesassi2007@yahoo.fr
44	DEMANOIS PLIN	MINISTERE DE L'INDUSTRIE	CHARGE D'ETUDE	05977983	
45	DOH THOMAS	ADERCI	CHARGE D'ETUDE	22422885	dohbiviethomas@yahoo.fr
46	APPAHOU ERIC	CABINET AGRI DADJE	ASSISTANT	08449688	appahoueric@yahoo.fr
47	BELLO ADJADJI	BNETD	CHARGE D'ETUDE	02501771	belloadjadj@yahoo.fr
48	KONAN YAO	BUREAU VERITAS	RESPONSABLE CERTIFICATION	03111117	jacques.konan@yahoo.fr
49	DAMEY JEAN JACQUES	SIVTA	RESPONSABLE TECHNIQUE	08723930	jandamey@yahoo.fr
50	TOURE BENEDICTE	MINEEF	CHARGE D'ETUDE	07639043	tourenln@yahoo.fr
51	EKRA DIANIKORO	SOTRA	CHE DE SECTION	02247299	dianikoro_ekra@yahoo.fr
52	LOUKOU JULES	FERAD	PCA	05460771	readeco@yahoo.fr
53	KOUAME GUILLAUME	MINEEF	CHEF DE SERVICE	07927214	vokog@yahoo.fr
54	KOUHIE GUEI	DGE	SOUS DIRECTEUR	20206065	kouhieg@yahoo.fr
55	SOUMAHORO MASSIANITHALI	MINEEF CABINET	CHARGE D'ETUDE	07273705	nathmassy@yahoo.fr
56	TOME GUEHI	SIVTA	DIRECTEUR GENERAL	21562649	gbehi8tome@yahoo.fr
57	DIDO EPOUSE NAMOU	PFG	CONSEILLERE	08308516	namou1@yahoo.fr
58	KOUAME AUGUSTIN	DIRECTION GENERAL E DE L'ELECTRICITE	CHARGE D'ETUDE	20206396	kkouameau@yahoo.fr
59	KOUADIO YAO	SITRADE	RESPONSABLE DE PROJET	20213720	kouadio_yleonard
60	DR.KADIO AHOSSANE	POINT FOCAL CHANGEMENT CLIMATIQUE	Coordonnateur Point Focal CHANGEMENT CLIMATIQUE	07924267	kahossane0yahoo.fr
61	KOUTOUA CLAUDE	CIE	CHARGE D'ETUDE	21233625	
62	AMAKOU AUGUSTIN	DIRECTION GENERALE DE L'ELECTRICITE	CHARGE D'ETUDE		amakouaugustin0yahoo.fr
63	LAURENT ADOPO	AZITO	Directeur Technique	22400236	luc.aye@yahoo.fr
64	GBO ZAMLA	ANADER	Responsable MDP	03593337	gbodzmala@yahoo.fr

Fraternité Matin / Vendredi 21 janvier 2011

Energie électrique Les experts s'imprègnent du Mdp

Un atelier de renforcement des capacités, pour une parfaite maîtrise du Mécanisme de développement propre (Mdp), par les experts du secteur de l'énergie s'est tenu les 19 et 20 janvier à Abidjan. Il leur aura permis d'être techniquement outillés pour valider le facteur d'émission du gaz carbonique ou Co2 du réseau électrique de Côte d'Ivoire. Ainsi que l'a expliqué M. Koffi Jacques au nom du directeur de l'Agence nationale de l'environnement (Ande), cette formation a pu doter les participants d'informations de pointe indispensables à l'élaboration de la Note idée de projet (Nip), ainsi que du Document descriptif de projet (Ddp), tout comme des techniques de financement. Tant il est vrai que la compétence des experts ivoiriens du secteur énergie, à contrôler le marché du carbone, dont s'occupe justement le Mdp à l'échelle planétaire, est à ce jour nécessaire pour l'économie nationale. C'est que,

révèle Rachel Boti Douayoua, coordonnateur national du Mdp, la quasi-totalité des projets du mécanisme du développement propre ont une composante énergie. L'objectif visé étant celui de favoriser l'usage à grande échelle des énergies renouvelables encore dites propres, pour lutter contre les changements climatiques. Une lutte dans laquelle la Côte d'Ivoire s'est, du reste, engagée depuis 2002, soutient le Pr Ochou Delfin directeur général de l'Environnement. Et ce, à travers la diversification des sources d'énergie - que sont la biomasse, la photovoltaïque, l'éolienne et le biogaz - qui produisent tous de l'électricité, sans émettre de gaz à effet de serre favorisant le réchauffement du climat.

Au total, l'évaluation du facteur d'émission du réseau électrique dans le pays permettra d'affiner au mieux les estimations des réductions d'émissions du Co2, pour le compte des projets Mdp Énergie.

MOUSSA TOURÉ