



**INVENTAIRE PRELIMINAIRE DES OPPORTUNITES
CONCRETES DE DEVELOPPEMENT DE PROJETS MDP
DANS LE SECTEUR DE L'ENERGIE EN HAITI ET
MESURES A METTRE EN ŒUVRE POUR EXPLOITER CE
POTENTIEL.**

VOLUME I.

Activités et approche méthodologique

**Présentation des Notes de Projets pour les 7 premiers projets
identifiés**



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I. INTRODUCTION

I.1 La Convention Cadre des Nations Unies sur les Changements Climatiques

Le réchauffement de la terre du fait des rejets de gaz à effet de serre (GES) liés aux activités anthropiques est maintenant un fait scientifiquement établi. Ses effets adverses sur le climat ont déjà commencé à se faire sentir avec la multiplication des catastrophes naturelles : vagues de chaleur, sécheresses, inondations, désertification, assèchement des cours d'eau, recul des lignes de côte et ouragans. Il menace sérieusement l'avenir des générations futures. La communauté internationale, a pris conscience de la gravité de la menace et de sa probabilité d'occurrence si aucune action n'est menée pour changer l'évolution actuelle des choses. Comme mesure de riposte, elle s'est engagée à travers la Convention Cadre des Nations Unies sur les Changements Climatiques (CCNUCC) à protéger l'environnement global avec comme ultime objectif, la stabilisation des concentrations de GES dans l'atmosphère à un niveau qui élimine toute perturbation dangereuse sur le climat.

I.2. Le Protocole de Kyoto

Pour rendre opérationnel la CCNUCC, et pour un « prompt start » imposé par les exigences d'une réaction rapide, il était nécessaire de prendre des mesures concrètes permettant d'aller dans le sens de l'ultime objectif de la CCNUCC. C'est l'objet du protocole du Protocole de Kyoto. Entre autres mesures, les parties annexes I (les pays « développés ») se sont engagées, à travers son article 3, à réduire globalement leurs émissions pour les ramener 5% en deçà de leur niveau de 1990 pendant la période allant de 2008 à 2012.

I.3. Le Mécanisme de Développement Propre (MDP) – Article 12 du protocole

Des actions menées uniquement au niveau local (sur l'offre et sur la demande interne en énergie ainsi que le remplacement de combustibles à haut coefficient d'émission par des combustibles à faible coefficient d'émission) ne permettront pas aux pays Annexe I de ramener leurs propres émissions de GES, 5% en deçà de leur niveau de 1990. Par ailleurs, le coût de la réduction d'une tonne équivalent de CO₂ varie beaucoup d'un pays à un autre. Il est estimé à 100 Euros par tonne équivalent aux Pays-Bas, 90 dollars au Japon et peut être inférieur à 3 dollars dans certains pays en développement. Aussi, pour aider les pays Annexe I à respecter leurs engagements, des mécanismes de flexibilité ont été introduits. Le MDP est l'un de ces mécanismes. Son objectif spécifique est de permettre aux pays non-annexe I de réaliser leurs objectifs de développement durable tout en contribuant à l'atteinte de l'objectif

ultime de la convention. En clair, il permet à un pays Annexe I de financer un projet permettant de réduire les émissions de GES dans un pays Non-annexe I, et en retour de bénéficier des crédits de réduction d'émission qu'il utilisera pour son compte comme quantité de GES qu'il a contribué à réduire.

I.4 Les opportunités offertes par le Mécanisme pour un Développement Propre

Le Mécanisme de Développement Propre (MDP) constitue une opportunité sans précédent qui pourrait être exploité pour lever les différentes barrières (financières, institutionnelles et réglementaires) qui entravent le développement du secteur de l'énergie dans les pays pauvres et aider à l'atteinte des objectifs de développement durable.

I.4.1. Le MDP contribue à la sécurité énergétique

Depuis la ratification du protocole de Kyoto, des centaines de projets dans le secteur de l'énergie ont été enregistrés comme projets MDP, à travers le monde. Le MDP a stimulé l'émergence de projets dans le secteur de la production d'énergie propre et a participé efficacement à l'amélioration de la faisabilité technique et financière de ces projets au point qu'ils puissent maintenant constituer des alternatives économiquement et financièrement viables des options conventionnelles de production d'énergie. Dans le cas d'Haïti, il peut ainsi réduire la dépendance vis-à-vis des combustibles fossiles importés. Dans certain cas, la mise en œuvre de projets MDP a aussi transformé des consommateurs d'énergie en producteur net d'énergie, ce qui en Haïti permettrait de réduire l'écart entre la demande et l'offre d'énergie.. Le MDP est aussi une forte incitation à la performance. De nombreux projets de récupération de chaleur ont déjà été approuvés à travers le monde. Le secteur énergétique Haïtien pourrait s'en inspirer.

I.4.2. Le MDP aide à mobiliser les ressources nécessaires pour les investissements de développement du secteur de l'énergie

Grâce au MDP, des investissements peuvent dans certains cas être mobilisés pour l'acquisition de technologies propres et ne pourront pas l'être pour la mise en œuvre de projets basés sur les technologies conventionnelles. Les projets du secteur privé mais aussi ceux du secteur public peuvent bénéficier de cette opportunité financière offerte par le MDP. Les revenus carbone sont en devises et ne sont pas liés à la capacité de paiement des consommateurs locaux. Ils peuvent aussi être sanctuarisés à l'étranger. Les projets MDP avec

contrat de préachat des crédits carbone peuvent avoir la notation AAA. Tout cela aide à réduire le risque pays et à attirer les capitaux privés ainsi que les investissements bancaires.

I.4.3. Le MDP améliore la soutenabilité des investissements et des institutions du secteur

Les revenus carbonés sont un cash flow qui peut participer à la couverture des charges d'exploitation et de maintenance. Ils participent ainsi à la solution de l'un des problèmes les plus aigus auxquels le secteur de l'énergie des pays en développement fait face. En effet, la plupart des installations énergétiques dans ces pays fonctionnent à taux de charge largement en dessous du nominal. Cette faible performance est principalement la conséquence du niveau de maintenance insuffisant. D'autres fois les installations sont à l'arrêt faute de ressources financières pour acheter du combustible. Ces revenus carbonés constituent donc un complément très utile à l'aide publique pour les investissements.

Haïti fait face à une demande en énergie moderne en forte croissance à laquelle il ne peut pas répondre dans la situation actuelle. Il en découle un écart important entre l'offre et la demande qu'il faut combler par la mise en œuvre de projets énergétiques. Comme la réalisation de ces projets dépend en partie de l'assistance financière et technologique des partenaires au développement, le MDP devient un puissant instrument que les bailleurs peuvent utiliser pour accompagner Haïti dans le choix de technologies propres et financièrement avantageuses pour le pays. Ceci est particulièrement vrai au niveau des projets producteurs et/ou consommateurs d'énergie. Des options à plus faible intensité d'émissions de Gaz à Effet de Serre (GES) compatibles avec les objectifs de développement durable définis par le gouvernement Haïtien peuvent être encouragées. Cependant, il reste entendu que ces options plus propres doivent rester des options gagnant-gagnant et pour l'environnement et pour le pays. Ceci est maintenant possible dans bien des cas grâce au MDP et à l'amélioration de la rentabilité des projets qu'il induit par l'apport de flux financiers additionnels aux projets à travers les finances carbonées. Le développement exponentiel des projets MDP enregistrés ainsi que l'impact positif des finances carbone sur leur rentabilité donne un exemple concret de ce que l'on peut faire pour allier protection de l'environnement global et développement durable au niveau du secteur de l'énergie en Haïti.

Enfin une opportunité offerte par le MDP et dont on parle rarement est le fait qu'il impose de disposer de données structurées, officielles et publiquement accessibles. Il va donc permettre de lever ce qui constitue l'une des plus importantes barrières pour la définition d'une politique

sectorielle, l'élaboration et la mise en œuvre de stratégie dans le secteur de l'énergie. Haïti qui a manifesté un intérêt pour prendre part au MDP devra d'une manière ou d'une autre aller résolument vers la constitution de ces banques de données.

La mise en œuvre dans les pays en développement d'une grande variété de projets MDP a été possible dans le secteur de l'énergie. Ces projets ont été réalisés au niveau des chaînes de production de l'électricité, des combustibles pour l'industrie, des combustibles pour le transport et des combustibles domestiques.

II OBJECTIFS DE L'ETUDE

L'objectif de cette étude est de faciliter l'utilisation du MDP comme instrument pour la mise en œuvre de projets utiles au développement énergétique d'Haïti.

III APPROCHE METHODOLOGIQUE

Pour atteindre l'objectif formulé, la démarche adoptée est basée sur l'approche processus. Le cycle du projet MDP est considéré comme un processus de production de Réduction d'Emissions Certifiée (REC). Tout le long de la chaîne du cycle du projet MDP, depuis l'idée de projet jusqu'à la production des REC, les processus et les acteurs clefs ont été identifiés. Les facteurs clefs de succès pour chaque étape du processus ont été déterminés. Les types d'action à mener sur les processus (acteurs, activités, intrants) pour créer les conditions d'exploitation du potentiel de développement de projet MDP Haïtien ont été formulés et certains mis en œuvre.

Figure1 : Le processus global de production de REC

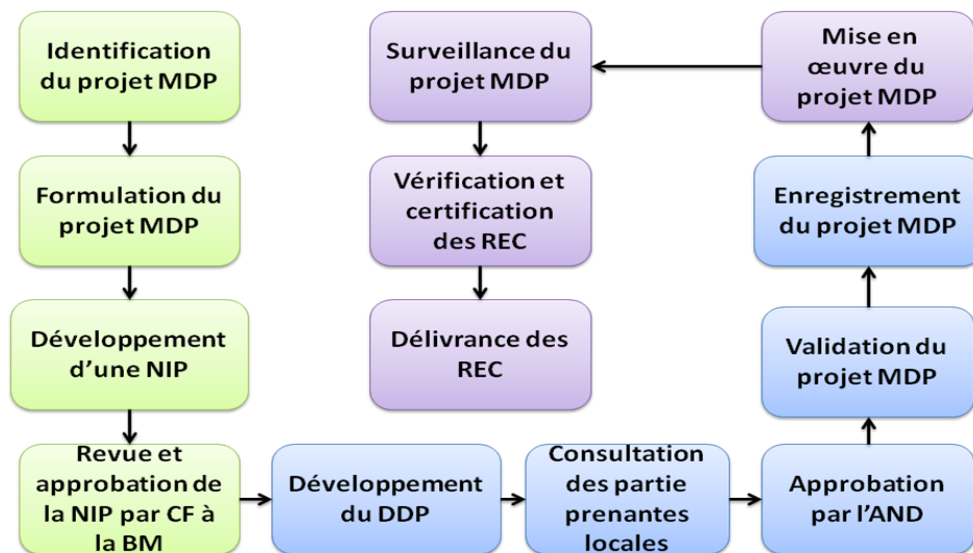
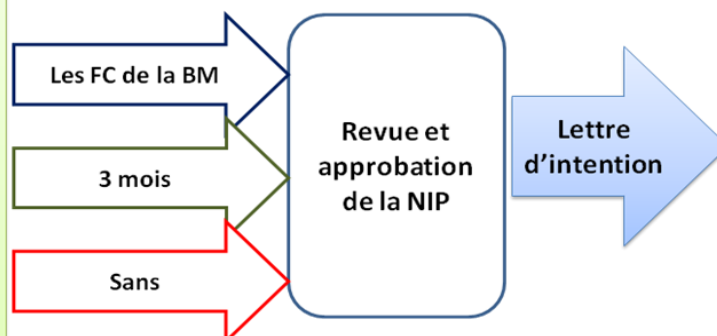


Figure 2 : Exemple d'étape avec ses facteurs clefs de succès

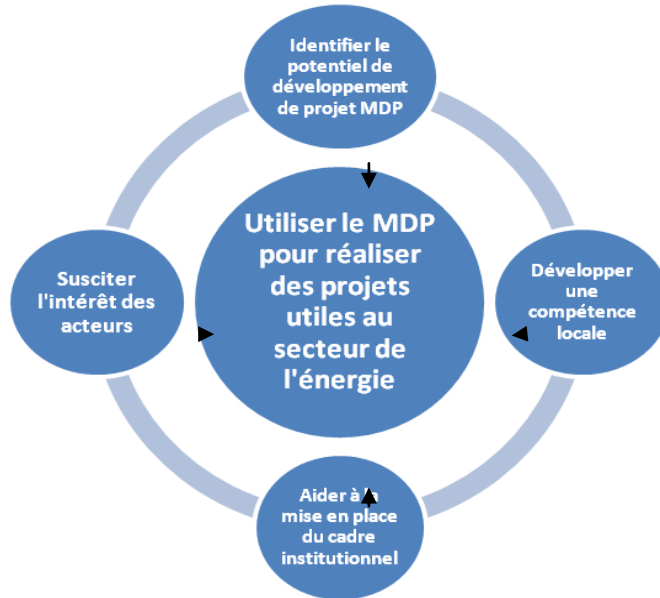
Facteurs clefs de succès **Acteurs/Délai/coût** Activités **Produit**

1. Description claire de la technologie utilisée par le projet pour réduire les émissions de GES
2. Utilisation d'une méthodologie approuvée applicable au projet ou possibilité de développer une NM
3. Lettre de non objection du pays hôte
4. Absence de problèmes environnementaux ou sociaux liés au projet
5. Financement du projet sans le MDP disponible
6. Quantité des émissions réduites
7. Qualité et expérience des porteurs de projet



IV ACTIVITES ET PRODUITS DU PROJET

Les activités du projet ont été déterminées en vue de lever certaines des barrières qui peuvent entraver le développement de projet MDP.



IV.1 Identification du potentiel de développement de projet MDP

IV.1.1. Activité

L'identification du potentiel de développement de projet MDP a contribué à susciter l'intérêt des parties prenantes qui n'avaient pas nécessairement conscience que des projets MDP pouvaient être développés dans leur secteur. La description des projets potentiels à travers leur finalité (définition génétique), les activités qui les composent (définition ontologique), leur mode de fonctionnement (définition fonctionnelle), les acteurs potentiels qui doivent intervenir dans ces types de projet, la méthodologie déjà approuvée qu'ils pourraient utiliser, ainsi que le calcul du potentiel de réduction d'émissions de Gaz à Effet de Serre associée et les flux financiers associés ont suscité l'intérêt des participants. L'exemple de tels projets déjà mis en œuvre dans d'autres pays a permis de rassurer sur leur faisabilité. L'identification du potentiel de développement de projet MDP a été un préalable pour la réalisation d'un programme de renforcement de capacité taillé sur mesure. La formation à la tâche a été effectuée sur des cas concrets de projets potentiels en Haïti. Ces études de cas, parce qu'elles concernaient des secteurs où évoluaient des porteurs de projets Haïtiens et des consultants potentiels qui pourraient les accompagner, ont suscité un grand intérêt.

IV.1.2. Produits

L'évaluation du potentiel de projets MDP potentiel est présenté de manière détaillé dans un second volume intitulé :

**« Inventaire préliminaire des opportunités concrètes de développement de projets mdp
dans le secteur de l'énergie en Haïti et mesures à mettre en œuvre pour exploiter ce
potentiel. - Volume 2
Evaluation du potentiel de projets MDP en Haïti »**

Ce volume est accompagné d'un fichier EXCEL détaillant les calculs et les résultats pour chaque type de projet considéré.

Nous ne présentons ici qu'une synthèse succincte de ces deux documents

L'étude du potentiel a permis d'identifier des projets potentiels dans des secteurs très variés :

- Hydroélectricité
- Cogénération à partir de la bagasse
- Cogénération à partir d'autres résidus agricoles
- Récupération de chaleur les fumées industrielles
- Amélioration de l'efficacité des systèmes vapeur
- Diffusion des lampes à forte efficacité énergétique
- Réduction des pertes liées à la distribution de l'électricité
- Production de biocombustible à base de Jatropha
- Projets de réduction de la consommation énergétique du secteur transport
- Remplacement partiel du charbon de bois par des briquettes de résidus agricoles
- Diffusion des foyers améliorés
- Réduction des émissions de méthane lors de la carbonisation.

Au total, ce sont 55 projets et 8 PoAs qui peuvent être mis en œuvre en Haïti. Il faut reconnaître que les réductions d'émission sont souvent relativement faibles. Mais ces projets sont généralement à très fort impact sur le développement durable. Au total, 2,1 millions de tonnes de CO₂ par an pourrait être réduites.

Le tableau 2 ci-dessous présente la synthèse des résultats de ce travail d'identification du potentiel de projets MDP dans le secteur de l'énergie à Haïti. Le détail des résultats et des calculs est disponible dans un fichier EXCEL annexé au rapport.

Table 2 : Synthesis of the estimate of the CDM projects potential in Haiti (details by technology are provided in an EXCEL sheet)

Country: Haiti	Récupération	Cogeneration	Cogeneration	Agricultural	Jatropha	Distribution	Lighting	Charcoal	Charcoal	Transport	Hydropower	Charcoal fuel switch
	de chaleur dans	Industries	Bagasse	residues		Efficiency		Carbonization	Stoves		plants projets	Charcoal/ residu
Unit	l'industrie	fossil fuels				Improvement						
Projects number	10	14	10	10	4	1	1	1	1	1	1	1
Annual emission reduction in tCO2 per year	79,666	72,395	147,150	328,736	127,452	21,609	32,022	174,516	103,826	140,163	126,072	311,477
Country GHG emissions in 2005	6,430,000	6,430,000	6,430,000	6,430,000	6,430,000	6,430,000	6,430,000	6,430,000	6,430,000	6,430,000	6,430,000	6,430,000
Emissions reduction in percent of the country emissions	1%	6.17%	1.12%	5.11%	1.98%	0.34%	0.50%	2.62%	1.56%	2.10%	0.62%	4.67%
Reduction over project life (10 or 21 years)	796,657	3,964,942	722,926	3,287,355	2,676,497	216,093	320,218	3,664,840	2,180,340	2,943,418	2,647,512	6,541,020
Value of the emission reduction in dollars (base 10 US\$/tCO2)	7,966,573	39,649,417	7,229,262	32,873,554	26,764,973	2,160,930	3,202,178	36,648,399	21,803,399	29,434,180	26,475,120	65,410,198
Value of the emission reduction in dollars (base 05 US\$/tCO2)	3,983,286	19,824,709	3,614,631	16,436,777	13,382,487	1,080,465	1,601,089	18,324,199	10,901,700	14,717,090	13,237,560	32,705,099
Annual electricity generation of the project in GWh	0	321.562	81.337	504	158	48	39.631	0	0		170	0
Annual electricity generation of the country in GWh (base 2003)	477	477	477	477	477	477	477	477	477		477	477
Project electricity generation as % of the country electricity generation	0	67%	17%	106%	33%	10%	8%	0%	0%		36%	0%
Annual electricity consumption of the country in GWh (base 2003)	384	384	384	384	384	384	384	384	384		384	384
Additional power due to the project implementation (load factor = 90%) MW	0	36.71	9.29	57.53	18.01	5.44	4.52	0.00	0.00		19.41	0.00
Country installed power in MW	157	157	157	157	157	157	157	157	157		157	157
Additional power as a percent of the country power	0	23%	6%	37%	11%	3%	3%	0%	0%		12.35%	0%
Total cost of the project in million US\$	0	36.71	13.93	86	39		11	0.00	0.00		16.50	0.00

	TOTAL	power only	average capacity
Projects number	55	41	3.7
Annual emission reduction in tCO2 per year	1,665,084		
Country GHG emissions in 2005	6,430,000		
Emissions reduction in percent of the country emissions	28.03%		
Reduction over project life (10 or 21 years)	29,961,818		
Value of the emission reduction in dollars (base 10 US\$/tCO2)	299,618,183		
Value of the emission reduction in dollars (base 05 US\$/tCO2)	149,809,092		
Annual electricity generation of the project in GWh	1,322		
Annual electricity generation of the country in GWh (base 2003)	477		
Project electricity generation as % of the country electricity generation	277%		
Annual electricity consumption of the country in GWh (base 2003)	4,221		
Additional power due to the project implementation (load factor = 90%) MW	150.90		
Country installed power in MW	157		
Additional power as a percent of the country power	96%		
Total cost of the project in million US\$	203.59		

(only 60 MW effectively working in 2008, 56 MW being repaired and the rest with low probability of being repaired)

Charcoal fuel switch	Charcoal fuel switch
Charcoal / LPG	Charcoal/ Kerosene
1	1
195,118	193,698
6,665,961	6,665,962
2.93%	2.91%
4,097,481	4,067,661
40,974,813	40,676,610
20,487,407	20,338,305
0	0
477	477
0%	0%
384	384
0.00	0.00
157	157
0%	0%
0.00	0.00

IV.2 Aider à la mise en place du cadre institutionnel

IV.2.1. Activité

La mise en place d'une Autorité Nationale Désignée (AND) fait partie des exigences dans les 'Modalités et Procédures pour un MDP' annexe de la Décision 17/CP.7 des Accords de Marrakesh. Elle fait partie des exigences de participation au MDP. Les pays non Annexe I comme Haïti doivent avoir ratifié le protocole de Kyoto et établi l'AND (Article 29 et 30 du chapitre F de l'annexe aux Modalités et procédures pour le MDP).

Le principal rôle de l'AND est d'approuver les projets MDP développés au niveau du pays hôte en fonction des critères de développement durable du pays. Sans l'AND, aucun projet ne peut être soumis.

Cette activité a consisté à doter le point focal MDP de Haïti (la Direction Générale de l'Environnement qui abritera probablement l'AND) des compétences nécessaires pour évaluer un projet MDP par rapport aux critères de développement durable du pays et à participer à la création des conditions pour sa mise en place (projet d'arrêté, critères de développement durable, procédures d'évaluation).

Suite à cette étude, l'AND a été créé le 28 août 2008 par note circulaire au sein de la Direction Générale du Ministère de l'Environnement. Il lui manque cependant les ressources financières nécessaires à son fonctionnement.

IV.2.2. Produits

- a. Deux séminaires sur le rôle de l'AND ainsi que les procédures d'approbation des projets MDP par l'AND. Le premier a eu lieu en Février 2008, le second s'est tenu en Juillet 2008.
- b. Développement d'une procédure d'approbation des projets MDP par l'AND.
- c. Projet d'arrêté de nomination de l'AND.

IV.3 Susciter l'intérêt des porteur potentiel de projets MDP du publique et du privé – Initier des projets et les introduire auprès de fonds carbone

IV.3.1. Activités

Un séminaire de sensibilisation (ou activité niveau 1) visant tous les acteurs du MDP a été organisé comme première manifestation pour le lancement du processus MDP en Haïti. Les acteurs ciblés ont été :

- Les porteurs potentiels de projet du privé (BRANA, BARBANCOURT, Biocarburants d'Haïti SA ...) mais aussi du publique (EDH,..)
- Les structures étatiques qui seront impliquées dans le comité national changement climatique
- Les ONG comme la Fondation Haïtienne pour l'Environnement
- Les institutions financières locales
- Les consultants locaux
- Les partenaires au développement présents en Haïti.

Les communications ont porté sur plusieurs thèmes.

a. La présentation du processus qui a donné naissance au MDP.

Une attention particulière a été accordée à une explication claire de la relation entre les changements climatiques, l'engagement des pays Annexe I et le marché du carbone. Des questions qui peuvent paraître simples pour quelqu'un qui a de l'expérience dans le MDP et qui sont en réalité complexes pour quelqu'un qui est en apprentissage ont été soigneusement traitées. La plus importante parmi ces questions est celle relative au processus de valorisation des réductions d'émission qui est à la base du marché carbone : 'Pourquoi l'achat de réduction d'émission, qui achète, qui vend, quelles sont les conditions de vente'. La relation a aussi été clairement établie entre le MDP et le développement durable du secteur énergétique. Enfin une démarche historique montrant le lien entre le constat du réchauffement de la terre, le vécu de ses effets néfastes sur le climat, la convention de Rio de Janeiro, son opérationnalisation à travers le protocole de Kyoto, la prise en charge par le protocole de la différence entre les coûts d'abattement de CO₂ d'un pays à un autre ayant conduit au mécanisme de flexibilité et la présentation de la spécificité du MDP parmi ces mécanisme de flexibilité comme celle ayant comme objectif à la fois d'aider les pays Annexe I à respecter leur engagement et les pays non-Annexe à atteindre leur objectifs de développement durable s'est montré très pédagogique. A la fin de la présentation de cette communication et des discussions qui l'ont suivi, il y a eu un consensus sur la possibilité d'utiliser le MDP comme instrument pour le

développement durable d'Haïti à travers les financements additionnels qu'il permettait de drainer. Plus personne ne voyait en ce mécanisme un moyen de freiner le développement des pays du Sud comme en essayant de les faire polluer moins.

b. Les opportunités offertes par le MDP au développement du secteur énergie.

L'approche chaîne de production a été utilisée. Pour les chaînes de production de l'électricité, des combustibles pour l'industrie, des combustibles pour le transport, des combustibles domestiques et pour la production, le transport et la distribution comme pour la consommation, les types de projets MDP qui peuvent être développés ont été présentés. Une attention particulière a ensuite été accordée aux projets qui peuvent utiliser une méthodologie approuvée et pour lesquels Haïti dispose d'un potentiel. Ce focus sur le potentiel de développement de projet en Haïti a permis de réveiller l'intérêt des participants qui ont commencé à réaliser que le MDP pouvait peut-être les aider à mettre en œuvre un projet qu'ils ont au sein de leur entreprise, leur municipalité, etc...

c. Le marché carbone

Cette communication a permis aux participants de prendre la mesure des enjeux. La taille du marché MDP impressionne. Elle a aussi permis de clarifier d'avantage le principe par lequel les réductions d'émissions de gaz à effet de serre pouvaient dans certaines conditions être transformées en valeurs financières.

d. Le rôle de l'AND

L'objectif de cette communication était de mettre à la disposition de l'AND les informations et outils nécessaires pour son fonctionnement. Elle a porté sur les activités que l'AND doit mener avec l'accent mis sur l'approbation des projets MDP. Comme exemple dont le Comité National Changement Climatique pourrait s'inspirer, des critères de développement durable ont été présentés ainsi qu'une procédure d'approbation des projets MDP

La connaissance, préalable à ce séminaire de vulgarisation, du potentiel Haïtien de développement de projets MDP a été très utile pour concevoir des modules taillés sur mesure, bâtis sur la base de projets potentiels que les participants peuvent mettre en œuvre. Ceci a été décisif pour susciter leur intérêt.

Pour maintenir cette enthousiasme, il a été jugé nécessaire pour six projets, choisis en fonction de critères précis, d'aller jusqu'au stade d'acceptation de la Note de Projet (PIN pour

Project Identification Note) pour jouer sur l'effet de démonstration de la faisabilité : (i) réhabilitation de la centrale hydroélectrique de Péligre, (ii) distribution de lampes à basse consommation, (iii) cogénération à partir de la bagasse dans la brasserie Barbancourt, (iv) récupération de la chaleur dans la distillerie Brana, (v) dissémination de réchauds améliorés, (vi) amélioration des processus de carbonisation, (vii) valorisation du jatropha et développement du biocarburant. Les versions préliminaires de ces PINs sont jointes en annexe de la deuxième partie du présent rapport, « Evaluation du potentiel de projets MDP en Haïti ».

La réalisation de ces PINs a été confiée à des consultants locaux, coachés par un consultant international. Les principaux critères pour le choix des PINs à développer ont été :

- La quantité de tonne de CO2 réduite par projet
- La disponibilité de financement BAU
- L'existence d'une méthodologie approuvée utilisable par le projet
- Intérêt stratégique pour le secteur

IV.2.2. Produits : 7 notes de projets (PINs)

Le tableau ci-dessous récapitule les principales caractéristiques de projets pour lesquels 7 Notes de Projet (PINs) ont été préparées dans le cadre de l'étude. Les versions préliminaires de ces 7 PINs qui sont en cours de révision, sont jointes en annexe. Bien que certaines soient en-dessous de la taille minimale requise par les fonds carbone de la Banque Mondiale, ces PINs ont bénéficié d'une première série de commentaires de la part d'experts de ces fonds carbone.

Tableau 2 : Caractéristiques des Projets pour lesquelles des PINs ont été préparées

Projet	Porteur de projet	Capacité (MW)	Réduction des émissions de carbone (TCO2/an)
1. Cogénération bagasse	Brasserie Barbancourt	0.71	8,442
2. Récupération de la chaleur	Distillerie Brana	NA	7,928
3. Distribution de 2.6M lampes CFL	Government of Haiti / EDH	9.60	80,000
4. Réhabilitation de la centrale hydro-électrique de Péligre	EDH/IDB	17.00	100,000

5. Distribution de 100,000 réchauds améliorés	ESMAP/WB	NA	63,063
6. Amélioration des techniques de carbonisation	Bureau des Mines et de l'Energie (BME)	NA	174,516
7. Développement du jatropha- biocarburant	Fondation haïtienne de l'environnement avec financement BID	0.20	7,547
8. Amélioration de la distribution (pas de PIN)	Projet GoH/BM/BID (PREPSEL)	5.44	21,609
TOTAL		32.96	463,105

IV.4 Développement des compétences à travers les activités de formation de niveau 2 et 3



IV.4.1. Activité de formation de niveau 2

L'activité de formation de niveau 2 visait la maîtrise des concepts de scénario du projet, de scénario alternatif à celui du projet, de scénario de ligne de base et d'additionnalité et la familiarisation avec les méthodologies se rapportant aux PINs à développer.

La première question à laquelle le projet devait répondre était qui devait participer à la formation de niveau 2 ? Ensuite quel devait être le contenu de cette formation ? Et enfin comment cette formation devait se faire.

Comme la mise en œuvre du projet devait permettre de lever les barrières qui entravent le développement du MDP, les acteurs ciblés devaient être ceux aux goulots d'étranglement du processus de développement des PINs, dont le renforcement de capacité devait permettre de libérer quelques projets. Pour le cas d'Haïti, ils ont été identifiés comme les porteurs de projets, quelques consultants présentant le meilleur profil et des membres du point focal MDP.

Pour une formation de niveau 2, il était nécessaire de se contenter d'un nombre limité de secteurs à traiter en détail. Les méthodologies en particulier devaient être étudiées pour pouvoir élaborer les PINs. Les secteurs à haut potentiel de développement de projets MDP en Haïti ont été retenus (cogénération, hydroélectricité, combustible domestique, plantation de Jatropha, diffusion de CFLs à travers un PoA).

L'approche des études de cas en atelier a été retenue pour cette formation de niveau 2. Deux cas de PINs ont été traités en détail (le projet hydroélectrique d'EDH et le projet de diffusion des CFLs). Les concepts de scénario de ligne de base et d'additionalité ont été revus en détail à travers ces deux projets.

Produits : les PINs réalisés au cours de cette formation.

IV.4.2. Activités de formation de niveau 3

Cette activité a été du 'coaching dans la réalisation de la tâche' et a concerné uniquement les consultants. Il s'agissait de mettre 4 consultants locaux chacun sur l'élaboration de deux PINs et de les faire 'coacher' par un consultant international. La formation de ces consultants locaux est une composante essentielle du projet. En effet, ils sont essentiels pour l'identification du potentiel de développement des projets MDP entre autre grâce à leur réseau relationnel et à leur connaissance du terrain. Sans eux, il serait très difficile pour un consultant international de mener à bien le travail d'inventaire du potentiel.

Produits

Les PINs des consultants.

CONCLUSION

L'approche utilisée semble être efficace pour atteindre l'objectif de création des conditions de développement du MDP pour servir le secteur de l'énergie en Haïti.

Les secteurs à potentiel de développement de projets MDP ont été clairement identifiés et le potentiel évalué. L'impact des différents projets sur le développement du secteur de l'énergie a aussi été estimé.

Au moins 5 projets MDP pourraient être lancés très prochainement. Les porteurs de ces projets ont participé aux activités de renforcement de capacité de niveau 1 et 2 et ont perçu le bien fondé d'exploiter les opportunités offertes par le MDP. C'est suite à ces sessions de sensibilisation que ces porteurs de projets ont décidé de mettre en œuvre leur projet MDP.

Les produits obtenus montrent que l'objectif spécifique de renforcement de capacité a été atteint dans une large mesure. Les porteurs de projets dans les secteurs identifiés, peuvent se faire appuyer par quatre consultants locaux pour l'élaboration des notes d'idées de projets (PINs). Ces consultants ont suivi les activités de renforcement de capacité de niveau 1, 2 et 3 et ont élaboré chacun 2 notes d'idées de projets (PINs) sous coaching.

Les conditions de mise en place de l'AND sont réunies. La Direction Générale de l'Environnement dispose d'un exemple de critères pour l'évaluation de l'impact sur le développement durable et d'une procédure d'évaluation du respect de ces critères par les projets MDP soumis.

ANNEXE 1 :

VERSIONS PRELIMINAIRES DES 7 NOTES DE PROJET (PINS)

PREPARÉES PAR LES CONSULTANTS LOCAUX

PIN 1: Cogénération Bagasse – Brasserie Barbencourt

REPUBLIC OF HAITI

Project Idea Note
(PIN)

Name of the Consultant

Arabela Adam

Name of Project:

Co-generation project-Bagasse boiler

Date submitted: July 10th, 2008

A. PROJECT DESCRIPTION, TYPE, LOCATION AND SCHEDULE

OBJECTIVE OF THE PROJECT <i>Describe in not more than 5 lines</i>	The objective of this proposed project activity is to reduce the energy expenditure of the Barbancourt distillery mills by producing electricity and heat in a cogeneration mode based on the excess of bagasse resulting from the operation of the plant.
PROJECT DESCRIPTION AND PROPOSED ACTIVITIES <i>About ½ page</i>	This project of producing electricity and heat with excess bagasse aims to improve the energy efficiency of the distillery while continuing to produce his good quality beverage. Generating electricity with excess bagasse, will allow it to replace the 600 kW diesel generators (with a consumption of 42.8 gal/hour of heavy fuel oil for 12 hours) with renewable biomass leading to CO ₂ emission reduction. In order to reach this goals “Société du Barbancourt” is planning to build a new plant with a steam cogeneration unit.
TECHNOLOGY TO BE EMPLOYED <i>Describe in not more than 5 lines</i>	The technology to be employed in this project is a cogeneration unit composed of a boiler operating at 21 bars and 260 °C and generating 8.3 tons of steam and a 650 kW turbo generator.
TYPE OF PROJECT	
Greenhouse gases targeted CO ₂ /CH ₄ /N ₂ O/HFCs/PFCs/SF ₆ <i>(mention what is applicable)</i>	Greenhouse gases targeted are CO ₂ /CH ₄
Type of activities Abatement/CO ₂ sequestration	Abatement.
Field of activities <i>(mention what is applicable)</i> <i>See annex 1 for examples</i>	1.1c Renewable bagasse
LOCATION OF THE PROJECT	
Country	Haiti
City	Port-au-Prince
Brief description of the location of the project <i>No more than 3-5 lines</i>	Part of the Caribbean region Haiti occupies 27,750 squares kilometres of land in an altitude 50m above sea level. G.P.S With a tropical climate influenced by northeast trade winds. Wet season generally lasts from February through May, dry season from November to January. Rainfall pattern irregular because of mountainous topography. Temperature in lowland areas varies from 15°C to 25°C in winter, 25°C to 35°C in summer. The project is located at Plaine-du-Cul de Sac near the capital city of

	Port-au-Prince at latitude and longitude
PROJECT PARTICIPANT	
Name of the Project Participant	Société du Rhum Barbancourt
Role of the Project Participant	a. Project Operator b. Owner of the site or project c. Owner of the emission reductions d. Seller of the emission reductions f. Project investor
Organizational category	d. Private company
Contact person	Thierry Gardere
Address	Damien, Plaine-du-Cul de Sac
Telephone/Fax	011-509-2-2506355/ 2-2502510/ 2 223-2357/2 5107110
E-mail and web address, if any	rhum@barbancourt.com
Main activities <i>Describe in not more than 5 lines</i>	Rhum Barbancourt was created 145 years ago. The company operates the whole process of distilling, ageing, bottling and saling of its famous Rhum Barbancourt, worldwide renowned. Société du rhum Barbancourt benefits from a strong brand name, acknowledge throughout the years by the most prestigious awards in the rhum industry.
Summary of the financials <i>Summarize the financials (total assets, revenues, profit, etc.) in not more than 5 lines</i>	The total cost of this project is 1,096,490 euros. For the first year Barbancourt dispose an own funds of 123, 176 euros, a grant of 712 718 euros, and a loan of 260,595 euros. This project will allowed the company to create a civil engineering works for approximately 53 333 euro, an additional human resources for assembly of the unit of 10,000 euros. The steam cogeneration unit is estimate for 773,666 euros; the boiler stack chimney is 31,250 and the gear reducer 25,000 euro. A contingency of 10% is also calculated. Notes: Official EU exchange rate USD 1.60
Summary of the relevant experience of the Project Participant <i>Describe in not more than 5 lines</i>	To date, Barbancourt has been working concretely over the project. The following actions have been taken: -Determining the most efficient place to built the new plant; -Requesting proposal for the different civil works necessary -Analyzing its needs in terms of turbine capacity according to its project operation and future growth -Requesting quotation for the manufacturing and the installation

	of the unit -Establishing a time frame for the work to be done
<i>Please insert information for additional Project Participants as necessary.</i>	
EXPECTED SCHEDULE	
Earliest project start date <i>Year in which the plant/project activity will be operational</i>	The plant project activity will be operational in the beginning of 2009
Estimate of time required before becoming operational after approval of the PIN	Time required for financial commitments: 2 months Time required for legal matters: 2 months Time required for construction: 9 months
Expected first year of CER/ERU/VERs delivery	End of 2009
Project lifetime <i>Number of years</i>	The project time life is estimated for 30 years witch is the lifetime of the equipment
For CDM projects: Expected Crediting Period <i>7 years twice renewable or 10 years fixed</i> For JI projects: Period within which ERUs are to be earned (<i>up to and including 2012</i>)	The Expected Crediting Period is fixed for 21 years
Current status or phase of the project <i>Identification and pre-selection phase/opportunity study finished/pre-feasibility study finished/feasibility study finished/negotiations phase/contracting phase etc. (mention what is applicable and indicate the documentation)</i>	The Feasibility study finished now the project is in a negotiation phase
Current status of acceptance of the Host Country <i>Letter of No Objection/Endorsement is available; Letter of No Objection/Endorsement is under discussion or available; Letter of Approval is under discussion or available (mention what is applicable)</i>	Endorsement under study, waiting for DNA structure establishment
The position of the Host Country with regard to the Kyoto Protocol	Haiti has ratified/acceded to the Kyoto Protocol and his ratification status is : Date of ratification: <u>06 July 2005</u> Date of entry into force: <u>04 October 2005</u>

B. METHODOLOGY AND ADDITIONALITY

ESTIMATE OF GREENHOUSE GASES ABATED/ CO₂ SEQUESTERED <i>In metric tons of CO₂-equivalent, please attach calculations</i>	Annual (if varies annually, provide schedule): 8 442 tCO₂-equivalent(see calculations in annex 2) Up to and including 2012: 33 768 tCO₂-equivalent Up to a period of 10 years: 84 420 tCO₂-equivalent Up to a period of 7 years: 59 094 tCO₂-equivalent
BASELINE SCENARIO CDM/JI projects must result in GHG emissions being lower than “business-as-usual” in the Host Country. At the PIN stage questions to be answered are at least: ☐ Which emissions are being reduced by the proposed CDM/JI project? ☐ What would the future look like without the proposed CDM/JI project? <i>About ¼ - ½ page</i>	In the absence of the proposed project activity the electricity and the heat will be produced separately based on fossil fuel as per the prevailing practice. The power generated by this project plant would in the absence of the project activity be generated in the existing fossil fuel (one large 600 KW generator with a consumption of 42.8 gal/hour for 12 hours operation a day) fired plant. The bagasse residues (75 % of excess bagasse) are only used in the project plant and would in the absence of the project activity be dumped or left to decay or burnt in an uncontrolled manner without utilizing it for energy purposes. The heat would in the absence of the project activity be generated in on-site boiler fired with fossil fuels, or by other means involving the biomass residues.
ADDITIONALITY Please explain which additionality arguments apply to the project: (i) there is no regulation or incentive scheme in place covering the project (ii) the project is financially weak or not the least cost option (iii) country risk, new technology for country, other barriers (iv) other	The prevailing practices in Haïti are that the distilleries don’t use their bagasse for energy generation purpose. In most of the cases, fossil fuel is used both for electricity and heat generation. This is due to the lack of finance for investment in biomass based electricity generators. In the absence of the CDM revenues, the project will not be able to make its financial closure and Barbancourt would continue to use fossil fuel for its energy needs.
SECTOR BACKGROUND Please describe the laws, regulations, policies and strategies of the Host Country that are of central relevance to the proposed project, as well as	The Haiti ‘Plan de Développement du Secteur de l’Energie 2007 – 2017’ elaborated by the ‘Ministère des Travaux Publics, Transport et Communications’ has identified the bagasse as a potentiel energy resources (140,000 tons are available according

any other major trends in the relevant sector. Please in particular explain if the project is running under a public incentive scheme (e.g. preferential tariffs, grants, Official Development Assistance) or is required by law. If the project is already in operation, please describe if CDM/JI revenues were considered in project planning.	to this document and only 15% of this quantity is used); The use of this renewable energy has been encouraged by this development plan of the energy sector
METHODOLOGY Please choose from the following options: For CDM projects: (i) project is covered by an existing Approved CDM Methodology or Approved CDM Small-Scale Methodology (ii) project needs a new methodology (iii) projects needs modification of existing Approved CDM Methodology For JI projects: (iv) project will use a baseline and monitoring plan in accordance with Appendix B of the JI Guidelines and further JISC guidance (V) project will use Approved CDM or CDM Small-Scale Methodology	The project is covered by an approved Baseline and monitoring methodology, ACM0006: Consolidated methodology for grid-connected electricity generation from biomass residues. With all data providing by Barbancourt, scenario 17 was selected for the establishment of the base line scenario and demonstration of additionality.

C. FINANCE

TOTAL CAPITAL COST ESTIMATE (PRE-OPERATIONAL)	
Development costs	
Installed costs	53,333euros million (Property plant, equipment, etc.)
Land	
Other costs (please specify)	
Total project costs	
SOURCES OF FINANCE TO BE SOUGHT OR ALREADY IDENTIFIED	

Equity Name of the organizations, status of financing agreements and finance (in US\$ million)	123, 176 euros.
Debt – Long-term Name of the organizations, status of financing agreements and finance (in US\$ million)	Loan of 260,595 euros
Debt – Short term Name of the organizations, status of financing agreements and finance (in US\$ million)	
Carbon finance advance payments sought from the World Bank carbon funds. (US\$ million and a brief clarification, not more than 5 lines)	Grant of 712 718 euros
SOURCES OF CARBON FINANCE Name of carbon financiers other than any of the World Bank carbon funds that you are contacting (if any)	Non applicable
INDICATIVE CER/ERU/VER PRICE PER tCO₂e <i>Price is subject to negotiation. Please indicate VER or CER preference if known.</i>	The indicative CER price per tCO ₂ is 12 euros
TOTAL EMISSION REDUCTION PURCHASE AGREEMENT (ERPA) VALUE	
A period until 2012 (end of the first commitment period)	405,216 €
A period of 10 years	1,013,040 €
A period of 7 years	709,128 €
Please provide a financial analysis for the proposed CDM/JI activity, including the forecast financial internal rate of return for the project with and without the Emission Reduction revenues. Provide the financial rate of return at the Emission Reduction price indicated in section “Indicative CER/ERU/VER Price”. DO NOT assume any up-front payment from the Carbon Finance Unit at the World Bank in the financial analysis that includes World Bank carbon revenue stream. Provide a spreadsheet to support these calculations. The PIN Financial Analysis Model available at www.carbonfinance.org is recommended.	

D. EXPECTED ENVIRONMENTAL AND SOCIAL BENEFITS

LOCAL BENEFITS E.g. impacts on local air, water and other pollution.	This project will help to reduce air pollution. People living in the area of the site will have a better sanitation, they would not suffer respiratory disease due to air pollution
GLOBAL BENEFITS	This project will contribute to initiate the first experience

Describe if other global benefits than greenhouse gas emission reductions can be attributed to the project.	cogeneration process in Haiti thru renewable energy development
SOCIO-ECONOMIC ASPECTS	
What social and economic effects can be attributed to the project and which would not have occurred in a comparable situation without that project? Indicate the communities and the number of people that will benefit from this project. <i>About ¼ page</i>	This Barbancourt project allow the company to: ➤ Diversify his production; ➤ Become autonomous for energy and ➤ Create jobs. In addition, the CO2 recovered in the plant will be sold to carbonated drinks companies. Barbancourt can also sell the excess electricity to the national grid.
What are the possible direct effects (e.g. employment creation, provision of capital required, foreign exchange effects)? <i>About ¼ page</i>	The project will allow Barbancourt to hire additional human resources for assembly of the unit for approximately 10, 000 euros.
What are the possible other effects (e.g. training/education associated with the introduction of new processes, technologies and products and/or the effects of a project on other industries)? <i>About ¼ page</i>	The project will support the training of the workers and provide them a technical assistance for a better knowledge of the new technology.
ENVIRONMENTAL STRATEGY/ PRIORITIES OF THE HOST COUNTRY A brief description of the project's consistency with the environmental strategy and priorities of the Host Country <i>Abaout ¼ page</i>	This Barbancourt approach is in line with the country strategies elaborated : 1. Environmental Action Plan under the Ministry of Environement 2. Energy Sector Development Plan elaborated jointly by Ministry of Public Works Transports and Communications, Bureau of Mines and E energy and electricity of Haiti. But due to lack of funds those strategies are not yet in implementation Rhum Barbancourt will never cease to be mindful of its ecological responsibilities. By burning bagasse the company would produce approximately 10 kilos/hour of ashes or 140 kilos/per day. The sugar cane field can absorb easily this quantity of ash that will carry with it the necessary minerals for plant growth. The financial assistance of the program in order to implement the project will enhance Barbancourt efficiency while helping him reaching its goal of being a major action protecting Haiti's ecology.

Annex 1

Baseline Scenario

It is assumed that in the absence of the project activity the base line scenario would be the use of fossil fuels to produce electricity and heat

For the Baseline emission we have to determinate

- bagasse production per year

Bagasse production *hour*day= 4 t*14*300

Bagasse production per year: 16 800 t/year

Quantity of bagasse produced per year= Q bagasse produce* hour* day

Quantity of bagasse produced per year= 16 800t/y

- Energy TEP/GJ in the ton bagasse produced/year

Q bagasse produce* NCV in TOE per ton bagasse/*TEP/GJ

16 800*0.16*41.84=112465,92GJ/year

Baseline Emission = 75, 07 tCO₂* TJ/year

Base line Emission= 75,05t CO₂*112,46TJ/year

Base line Emission = 8,442 tCO₂/year

Notes

The bottom/up approach is use for the basic calculation with data provided by Barbancourt

Barbancourt bagasse production in ton per hour	4
Number of operating hours	14
Number of operating days per year	300
Barbancourt bagasse production in ton per year	16800
Consider average production of bagasse per year	15000
Percent of bagasse from sugar cane	30%
Assumption: Only 75% of the bagasse produced is used	75%
NCV Bagasse in TOE per ton Bagasse	0.16
TEP en GJ	41.84
Efficiency of electricity generation	30%
Percent of sugar cane transformed	90%

Annex 2

Emission Reductions

$$ER_y = ER_{\text{heat}} + ER_{\text{electricity}}/1000 * \text{Carbon emission factor of the fuel used in industries tCO}_2$$

Data:

- Steam rate of 90%
- Project heat generation GJ 1,005 159
- Project electricity generation GJ 312,500
- Electricity production rate 33%
- Carbon emission factor of the diesel used in industries for heating tCO₂ 71.30

$$ER_{\text{heat}} = \text{Project heat generation GJ/year} / \text{steam generation rate}$$

$$ER_{\text{heat}} = 1,116\,843 \text{ GJ/year}$$

$$ER_{\text{electricity}} = \text{Project electricity generation GJ/year} * \text{electricity production rate}$$

$$ER_{\text{electricity}} = 946,970 \text{ GJ/year}$$

$$ER_y = (1,116,843 + 946,970) / 1000 * 71.30 \text{ tCO}_2/\text{year}$$

$$ER_y = 147,150 \text{ t CO}_2/\text{year}$$

PIN :2 Récupération de la chaleur – Brasserie Brana.

REPUBLIC OF HAITI

Project Idea Note
(PIN)

Name of the Consultant : Arabela Adam

Name of Project: Heat Recovery From BRANA Brewery Plant

Date submitted: July, 2008

A. PROJECT DESCRIPTION, TYPE, LOCATION AND SCHEDULE

OBJECTIVE OF THE PROJECT <i>Describe in not more than 5 lines</i>	The objective of the proposed project activity is to increase the energy efficiency of the BRANA brewery. It will lead to less CO2 emission of the plant.
PROJECT DESCRIPTION AND PROPOSED ACTIVITIES <i>About ½ page</i>	This project consists of recovering heat from flue gases. Currently Brana produces its own electricity using six diesel generators (1,538,055 gallons of diesel used from March 07 to Feb. 08). Heavy fuel is used to generate steam (725,810 gallons for the same period) for the heating of the processes. Further, the purchase of CO2 produced based on the burning of fossil fuel without heat recovery amounted to 5,240,158 lbs for the same period. The heat in the flue gases is released to the atmosphere. The project consists of recovering the heat released at high temperature to the atmosphere.
TECHNOLOGY TO BE EMPLOYED¹ <i>Describe in not more than 5 lines</i>	The equipments for this project should meet the latest regulations. A standard high efficient steam turbine plant for steam based electricity generation will be installed. The quality has to meet Pepsi Co. standards.
TYPE OF PROJECT	
Greenhouse gases targeted CO ₂ /CH ₄ /N ₂ O/HFCs/PFCs/SF ₆ <i>(mention what is applicable)</i>	CO2
Type of activities Abatement/CO ₂ sequestration	CO2 reduction
Field of activities <i>(mention what is applicable)</i> <i>See annex 1 for examples</i>	Other energy efficiency (3e) will be used in the field of activity for this project
LOCATION OF THE PROJECT	
Country	Haiti
City	Port-au-Prince
Brief description of the location of the project <i>No more than 3-5 lines</i>	The Republic of Haiti comprises the western one-third of the island of Hispaniola , while the Dominican Republic is at the east side of the same island. The Island is located between the Caribbean Sea in the south and the Atlantic Ocean in the north. Haiti's geographic coordinates are at longitude of 72° 25' west and latitude of 19° 00' north. Temperature in

¹ Please note that support can only be provided to projects that employ commercially available technology. It would be useful to provide a few examples of where the proposed technology has been employed.

	lowland areas varies from 15°C to 25°C in winter, 25°C to 35°C in summer. The project is located at the Capital City of Port-au-Prince
PROJECT PARTICIPANT	
Name of the Project Participant	Brasserie Nationale d'Haiti S.A.
Role of the Project Participant	a. Owner of the site or project X b. Owner of the emission reductions X c. Seller of the emission reductions X d. Other, please specify: _____
Organizational category	a. Private company X b. Other, please specify: _____
Contact person	Carl Frederic Madsen
Address	Route de l'Aéroport, Port-Au-Prince, Haiti
Telephone/Fax	011-509-3-701-0435
E-mail and web address, if any	fmadsen@branahaiti.com
Main activities <i>Describe in not more than 5 lines</i>	Brasserie Nationale D'Haiti also called Brana is the foremost brewery and bottler in Haiti . Since 1973, Brana has been under license to manage the manufacture and distribution for PepsiCo International as well, covering such soft drink brand names as Pepsi , 7up , and Teem.
Summary of the financials <i>Summarize the financials (total assets, revenues, profit, etc.) in not more than 5 lines</i>	
Summary of the relevant experience of the Project Participant <i>Describe in not more than 5 lines</i>	Brana has been in operation for over 30 years. Producers of Brewed products, soft drinks, bottled mineralized water and milk. They also produce their own electricity to cover the needs of the enterprise
<i>Please insert information for additional Project Participants as necessary.</i>	
EXPECTED SCHEDULE	
Earliest project start date <i>Year in which the plant/project activity will be operational</i>	In middle of 2009
Estimate of time required before becoming operational after approval of the PIN	Time required for financial commitments: __ months Time required for legal matters: __ months Time required for construction: __ months
Expected first year of CER/ERU/VERs delivery	2010
Project lifetime <i>Number of years</i>	10 years
For CDM projects: Expected Crediting Period	21 years

<i>7 years twice renewable or 10 years fixed</i> For JI projects: Period within which ERUs are to be earned (<i>up to and including 2012</i>)	
Current status or phase of the project <i>Identification and pre-selection phase/opportunity study finished/pre-feasibility study finished/feasibility study finished/negotiations phase/contracting phase etc. (mention what is applicable and indicate the documentation)</i>	Identification and pre-selection
Current status of acceptance of the Host Country <i>Letter of No Objection/Endorsement is available; Letter of No Objection/Endorsement is under discussion or available; Letter of Approval is under discussion or available (mention what is applicable)</i>	Endorsement under study, waiting for DNA structure establishment
The position of the Host Country with regard to the Kyoto Protocol	Haiti has ratified/acceded to the Kyoto Protocol and his ratification status is : Date of ratification: <u>06 July 2005</u> Date of entry into force: <u>04 October 2005</u>

B. METHODOLOGY AND ADDITIONALITY

ESTIMATE OF GREENHOUSE GASES ABATED/ CO₂ SEQUESTERED <i>In metric tons of CO₂-equivalent, please attach calculations</i>	Annual (if varies annually, provide schedule): 7 928 tCO₂-equivalent(see calculations in annex 2) Up to and including 2012: 31 712 tCO₂-equivalent Up to a period of 10 years: 79 280 CO₂-equivalent Up to a period of 7 years: 55 496 tCO₂-equivalent
BASELINE SCENARIO CDM/JI projects must result in GHG emissions being lower than “business-as-usual” in the Host Country. At the PIN stage questions to be answered	The Emission Reduction represent annually 7 928 tCO₂/year. The baseline scenario is the release of the heat from the electricity generators to the atmosphere and the use of the boilers to produce the steam generated in the project scenario by the heat recovery steam generator.

are at least: • Which emissions are being reduced by the proposed CDM/JI project? • What would the future look like without the proposed CDM/JI project? <i>About ¼ - ½ page</i>	
ADDITIONALITY Please explain which additionality arguments apply to the project: (i) there is no regulation or incentive scheme in place covering the project (ii) the project is financially weak or not the least cost option (iii) country risk, new technology for country, other barriers (iv) other	The Host Country has no regulation covering the project and the project's participant has no obligation to recover heat in the electricity generator exhaust gas. The common practice is the release of the electricity generator exhaust gas without heat recovery. Access to finance is the main barrier for the implementation of this proposed project activity. Financing mechanisms from CDM can then be used to facilitate the access to finance from foreign investors.
SECTOR BACKGROUND Please describe the laws, regulations, policies and strategies of the Host Country that are of central relevance to the proposed project, as well as any other major trends in the relevant sector. Please in particular explain if the project is running under a public incentive scheme (e.g. preferential tariffs, grants, Official Development Assistance) or is required by law. If the project is already in operation, please describe if CDM/JI revenues were considered in project planning.	Heat recovery process is a new one in the country but it has been included in two strategic documents governing the energy sector: 1. The Electricity Sector Development Plan and 2. The Energy Sector Development Plan. Both documents can be seen at the Bureau of Mines and Energy web site: www.bme.gouv.ht However, these two main strategies for the Energy sector are not being implemented for financial lack.
METHODOLOGY Please choose from the following options: For CDM projects: (i) project is covered by an existing Approved CDM	The applicable methodology to the project is ACM0012: "Consolidated baseline methodology for GHG emission reductions for waste gas or waste heat or waste pressure based energy system"

Methodology or Approved CDM Small-Scale Methodology (ii) project needs a new methodology (iii) projects needs modification of existing Approved CDM Methodology For JI projects: (iv) project will use a baseline and monitoring plan in accordance with Appendix B of the JI Guidelines and further JISC guidance (V) project will use Approved CDM or CDM Small-Scale Methodology	
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C. FINANCE

TOTAL CAPITAL COST ESTIMATE (PRE-OPERATIONAL)	
Development costs	___ US\$ million (Feasibility studies, resource studies, etc.)
Installed costs	___ US\$ million (Property plant, equipment, etc.)
Land	___ US\$ million
Other costs (please specify)	___ US\$ million (Legal, consulting, etc.)
Total project costs	___ US\$ million
SOURCES OF FINANCE TO BE SOUGHT OR ALREADY IDENTIFIED	
Equity Name of the organizations, status of financing agreements and finance (in US\$ million)	
Debt – Long-term Name of the organizations, status of financing agreements and finance (in US\$ million)	
Debt – Short term Name of the organizations, status of financing agreements and finance (in US\$ million)	
Carbon finance advance payments ² sought from the World Bank carbon funds. (US\$ million and a brief clarification, not more than 5 lines)	
SOURCES OF CARBON	Non applicable

² Advance payment subject to appropriate guarantees may be considered.

FINANCE Name of carbon financiers other than any of the World Bank carbon funds that your are contacting (if any)	
INDICATIVE CER/ERU/VER PRICE PER tCO₂e³ <i>Price is subject to negotiation. Please indicate VER or CER preference if known.⁴</i>	10 Euros
TOTAL EMISSION REDUCTION PURCHASE AGREEMENT (ERPA) VALUE	
A period until 2012 (end of the first commitment period)	___ US\$ / €
A period of 10 years	___ US\$ / €
A period of 7 years	___ US\$ / €
Please provide a financial analysis for the proposed CDM/JI activity, including the forecast financial internal rate of return for the project with and without the Emission Reduction revenues. Provide the financial rate of return at the Emission Reduction price indicated in section “Indicative CER/ERU/VER Price”. DO NOT assume any up-front payment from the Carbon Finance Unit at the World Bank in the financial analysis that includes World Bank carbon revenue stream. Provide a spreadsheet to support these calculations. The PIN Financial Analysis Model available at www.carbonfinance.org is recommended.	

D. EXPECTED ENVIRONMENTAL AND SOCIAL BENEFITS

LOCAL BENEFITS E.g. impacts on local air, water and other pollution.	This project will help to reduce air pollution in the area of the site. This project will contribute to initiate the first experience of heat Recovered process in Haiti.
GLOBAL BENEFITS Describe if other global benefits than greenhouse gas emission reductions can be attributed to the project.	
SOCIO-ECONOMIC ASPECTS	
What social and economic effects can be attributed to the	The proposed project activity will reduce the national fuel consumption and the import of fuel leading to improved Balance Of Payments.

³ Please also use this figure as the carbon price in the PIN Financial Analysis Model (cell C94).

⁴ The World Bank Carbon Finance Unit encourages the seller to make an informed decision based on sufficient

understanding of the relative risks and price trade-offs of selling VERs vs. CERs. In VER contracts, buyers assume all carbon-specific risks described above, and payment is made once the ERs are verified by the UN-accredited verifier. In CER/ERU contracts, the seller usually assumes a larger component - if not all – of the

carbon risks. In such contracts, payment is typically being made upon delivery of the CER/ERU. For more information about Pricing and Risk, see [“Risk and Pricing in CDM/JI Market, and Implications on Bank Pricing Guidelines for Emission Reductions”](#).

project and which would not have occurred in a comparable situation without that project? Indicate the communities and the number of people that will benefit from this project. <i>About ¼ page</i>	
What are the possible direct effects (e.g. employment creation, provision of capital required, foreign exchange effects)? <i>About ¼ page</i>	
What are the possible other effects (e.g. training/education associated with the introduction of new processes, technologies and products and/or the effects of a project on other industries)? <i>About ¼ page</i>	
ENVIRONMENTAL STRATEGY/ PRIORITIES OF THE HOST COUNTRY A brief description of the project's consistency with the environmental strategy and priorities of the Host Country <i>About ¼ page</i>	This Brana approach is in line with the country strategy in the Energy Sector Development Plan elaborated jointly by Ministry of Public Works Transports and Communications, Bureau of Mines and Energy and electricity of Haiti. But due to lack of funds those strategies are not yet in implementation

Annex 1

Baseline Scenario

It is assumed that in the absence of the project activity the base line scenario would be the use of fossil fuels to generate heat

The Top/down approach (based on the consumption of fuel non for the production of electricity) is use for the basic calculation with data provided by BRANA

For the Baseline emission we have to determinate

n boilers: 6

Exhaust gas flow: 9947kg/h

Flue gas specific enthalpy en KJ/kg: 440

Flue gas specific enthalpy en KJ/kg: 175

Baseline Emission = $(6 * 9947 * 265)$ TJ/Y

Base Line Emission = 15,815.73 tCO₂/year

Annex 2

Emission Reduction

Emission Reduction=Base Line Emission-Project Emission

Annual Emission Reduction in tCO₂ per Year = Energy recovered in TJ/Year * Carbon
Emission factorTJ

Energy recovered in TJ/Year 102

Carbon Emission factor 77.73

Emission Reduction in tCO₂ per Year = 102TJ* 77.73 tCO₂/TJ

Emission Reduction = 7,928.46 tCO₂/Year

**PIN 3: Distribution de 2.6M lampes Lampes Basse consommation
(LBC)**

REPUBLIC OF HAITI

Project Idea Note
(PIN)

Name of the Consultant: Jean Marie DESCORBETH

Name of Project: Electricity Saving in Households Lighting

Date submitted: Juillet 2008

A. PROJECT DESCRIPTION, TYPE, LOCATION AND SCHEDULE

OBJECTIVE OF THE PROJECT <i>Describe in not more than 5 lines</i>	The Objective of the project is to reduce the peak electricity demand and save electric energy through households lighting by facilitating acquisition and installation of more efficient bulbs on a sustainable manner.
PROJECT DESCRIPTION AND PROPOSED ACTIVITIES <i>About ½ page</i>	The proposed project scope consists of: - Continuing replacement of Incandescent Light Bulb (ILB) in households that have not yet converted their lamp into compact fluorescent light - At their end life time, replacing already installed high quality Compact Fluorescent Lamps (CFL) by same quality CFL To achieve this scope of work the following activities will be performed: a) Identification of the end users all over the electrified cities of the country b) Inventory of the devices to be replaced. The inventory will describe the number of the devices as well as the quality like power, mark, life time and prices etc c) Complete a communication program to explain and convince the end users of the importance to them and to the country of such activities, and seek their approval and their collaboration for the success of the project; d) Provide incentives for acquisition and replacement of a new CFL at the end life time of the installed CFLs.
TECHNOLOGY TO BE EMPLOYED⁵ <i>Describe in not more than 5 lines</i>	High quality CFL will be replaced by same ones able to operate under important voltage fluctuations which is the main characteristics of the local grids. Approved replacement procedures will be implemented.
TYPE OF PROJECT	
Greenhouse gases targeted CO ₂ /CH ₄ /N ₂ O/HFCs/PFCs/SF ₆ <i>(mention what is applicable)</i>	CO2
Type of activities Abatement/CO ₂ sequestration	Abatement of GHG
Field of activities <i>(mention what is applicable)</i> <i>See annex 1 for examples</i>	Energy efficiency 3e
LOCATION OF THE PROJECT	
Country	HAITI
City	
Brief description of the location of the project <i>No more than 3-5 lines</i>	Urban populations are the most concerned because rural electrification is not yet well established in this country. The project will then be in the electrified cities all around the 10 geographical department of the country.
PROJECT PARTICIPANT	

⁵ Please note that support can only be provided to projects that employ commercially available technology. It would be useful to provide a few examples of where the proposed technology has been employed.

Name of the Project Participant	Electricité d'Haïti (EDH)
Role of the Project Participant	a. <u>Project Operator</u> b. <u>Owner of the emission reductions</u> c. <u>Seller of the emission reductions</u> d. <u>Project investor</u>
Organizational category	a. <u>Government agency</u>
Contact person	Alix Dominique ALEXIS
Address	Angles Rues Pavée et Magasin de l'Etat
Telephone/Fax	(509) 22 23 55 40
E-mail and web address, if any	Aldoni16@yahoo.com.mx
Main activities <i>Describe in not more than 5 lines</i>	The law of August 9, 1971, has established the "Electricité d'Haïti" (EDH) as an autonomous state-owned, vertically integrated enterprise with the monopoly of the production, transmission, distribution and commercialization of electricity throughout the country. Ed'H is reporting to the Ministry of Public Works , Transports ad Communications who names its board of Directors.
Summary of the financials <i>Summarize the financials (total assets, revenues, profit, etc.) in not more than 5 lines</i>	During the year 2006-2007, Ed'H expenses (142,109,443.96 USD) are higher than its revenues (51,113,973.13 USD) leading to a deficit of (90,995,470.83 USD) due mainly to electricity thefts and unrecovered bills. 1 USD = 39 gourdes
Summary of the relevant experience of the Project Participant <i>Describe in not more than 5 lines</i>	- Building and operating thermal and renewable energy based power plants mainly mini hydroelectric plants - Building of transmission and distribution lines in isolated and integrated grids - Maintenance of all the system including plants, transformers and grids - managing more than 130.000 clients
EXPECTED SCHEDULE	
Earliest project start date <i>Year in which the plant/project activity will be operational</i>	2009
Estimate of time required before becoming operational after approval of the PIN	Time required for financial commitments: 0 months Time required for legal matters: 0 months Time required for implementation: <u>6</u> months
Expected first year of CER/ERU/VERs delivery	2009
Project lifetime <i>Number of years</i>	10 years
For CDM projects: Expected Crediting Period <i>7 years twice renewable or 10 years fixed</i>	10 years once
For JI projects:	

Period within which ERUs are to be earned (<i>up to and including 2012</i>)	
Current status or phase of the project <i>Identification and pre-selection phase/opportunity study finished/pre-feasibility study finished/feasibility study finished/negotiations phase/contracting phase etc. (mention what is applicable and indicate the documentation)</i>	Contracting phase (Source: EDH)
Current status of acceptance of the Host Country <i>Letter of No Objection/Endorsement is available; Letter of No Objection/Endorsement is under discussion or available; Letter of Approval is under discussion or available (mention what is applicable)</i>	DNA is in the process of being implemented
The position of the Host Country with regard to the Kyoto Protocol	Has the Host Country ratified/acceded to the Kyoto Protocol? <u>YES, YEAR:06 July 2005</u> Has the Host Country established a CDM Designated National Authority / JI Designated Focal Point? <u>YES</u>

B. METHODOLOGY AND ADDITIONALITY

ESTIMATE OF GREENHOUSE GASES ABATED/ CO₂ SEQUESTERED <i>In metric tons of CO₂-equivalent, please attach calculations</i>	It is assumed a replacement of the 2,366,000 currently installed CFLs. These CFLs have been freely granted to the Haiti government by the Cuban government. The country emission factor calculated of 0.7416 tCO₂/MWh is considered The lamps are assumed to operate 4 hours per day The baseline ILB is assumed to be a 40 W light bulb The annual emission reduction due to the program is: $2,300,000 \times 4 \times 365 \times (40-8) / 1,000,000$ Annual (if varies annually, provide schedule): 80,000 tCO₂-equivalent Up to and including 2012: 320,000 tCO₂-equivalent Up to a period of 10 years: 800,000 tCO₂-equivalent Up to a period of 7 years: 560,000 tCO₂-equivalent
BASELINE SCENARIO	The baseline scenario is calculated as recommended by AMS II C

CDM/JI projects must result in GHG emissions being lower than “business-as-usual” in the Host Country. At the PIN stage questions to be answered are at least: • Which emissions are being reduced by the proposed CDM/JI project? • What would the future look like without the proposed CDM/JI project? About ¼ - ½ page	1. Replacement of INCANDESCENT light bulbs (the project implemented without being register as CDM project) 2. Continuation of the current situation 3. Used of CFLs of Low quality (short life span, low quality in terms of lumen) The third scenario is most likely because the user that will experiment the CFLs of low quality will not continue buying it, due to the low quality. The frequency of changing of bulbs will discourage consumers to continue buying the lower quality CFLs. The scenario 1 faces the following barriers: the cost of CFLs (4usd) is very high compare to the cost of INCANDESCENT bulbs (0.8 usd). A population with low income will not be able to buy such an expensive bulb. Furthermore the government has other priority such as agriculture, health, education and will not subsidize cost of CFLs. The second scenario is the one being considered by the project
ADDITIONALITY Please explain which additionality arguments apply to the project: (i) there is no regulation or incentive scheme in place covering the project (ii) the project is financially weak or not the least cost option (iii) country risk, new technology for country, other barriers (iv) other	1-The proposed project will not be financed by local financial Institutions which never finance such projects for institutions like ED’H which is always in a deficit state. 2-The revenue per capita, less than a 1 USD per day proves the financial barrier to end users in order to replace the bulbs by energy saving ones. 3-There is no interest in investment in electricity because of deficit standing of Ed’H characterized by lack of maintenance of equipments and difficulty to protect and secure these equipments. 4-The government who should support such project has other priorities in education, health, hunger etc. Thus, without the project, registered as CDM project the government will not have incentives to allocate sufficient funds to finance the project and the country will lose all possible benefits of implementing the project.
SECTOR BACKGROUND Please describe the laws, regulations, policies and strategies of the Host Country that are of central relevance to the proposed project, as well as any other major trends in the relevant sector. Please in particular explain if the project is running under a public incentive scheme (e.g. preferential tariffs, grants, Official Development Assistance) or is required by law. If the project is already in	The State has regularly defined his strategies through the following documentation: 1. Electric Sector Development plan under the Ministry of Public Works , Transports and Communication (MTPTC) to which report the electricity of Haiti and the Bureau of Mines and Energy. 2. Energy sector development plan under the Bureau of Mines and Energy and the Electricity of Haiti, both reporting to the MTPTC 3. Environmental Protection Plan under the Ministry of Environment But due to lack of funding most of those plans are not yet being implemented.

operation, please describe if CDM/JI revenues were considered in project planning.	
METHODOLOGY Please choose from the following options: For CDM projects: (i) project is covered by an existing Approved CDM Methodology or Approved CDM Small-Scale Methodology (ii) project needs a new methodology (iii) projects needs modification of existing Approved CDM Methodology For JI projects: (iv) project will use a baseline and monitoring plan in accordance with Appendix B of the JI Guidelines and further JISC guidance (V) project will use Approved CDM or CDM Small-Scale Methodology	The proposed project can use AMS II C

C. FINANCE

TOTAL CAPITAL COST ESTIMATE (PRE-OPERATIONAL)	
Development costs	US\$ 18 million (equipment:CFL)
Installed costs	
Land	
Other costs (please specify)	1,00,000.00__ US\$ million (Legal, consulting, etc.)
Total project costs	18,100,000.00__ US\$ million
SOURCES OF FINANCE TO BE SOUGHT OR ALREADY IDENTIFIED	
Equity Name of the organizations, status of financing agreements and finance (in US\$ million)	
Debt – Long-term Name of the organizations, status of financing agreements and finance (in US\$ million)	
Debt – Short term Name of the organizations,	

status of financing agreements and finance (in US\$ million)	
Carbon finance advance payments ⁶ sought from the World Bank carbon funds. (US\$ million and a brief clarification, not more than 5 lines)	
SOURCES OF CARBON FINANCE Name of carbon financiers other than any of the World Bank carbon funds that your are contacting (if any)	
INDICATIVE CER/ERU/VER PRICE PER tCO₂e⁷ <i>Price is subject to negotiation. Please indicate VER or CER preference if known.⁸</i>	
TOTAL EMISSION REDUCTION PURCHASE AGREEMENT (ERPA) VALUE	
A period until 2012 (end of the first commitment period)	€
A period of 10 years	€
A period of 7 years	€
Please provide a financial analysis for the proposed CDM/JI activity, including the forecast financial internal rate of return for the project with and without the Emission Reduction revenues. Provide the financial rate of return at the Emission Reduction price indicated in section “Indicative CER/ERU/VER Price”. DO NOT assume any up-front payment from the Carbon Finance Unit at the World Bank in the financial analysis that includes World Bank carbon revenue stream. Provide a spreadsheet to support these calculations. The PIN Financial Analysis Model available at www.carbonfinance.org is recommended.	

D. EXPECTED ENVIRONMENTAL AND SOCIAL BENEFITS

LOCAL BENEFITS E.g. impacts on local air, water	
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⁶ Advance payment subject to appropriate guarantees may be considered.

⁶ Please also use this figure as the carbon price in the PIN Financial Analysis Model (cell C94).

⁶ The World Bank Carbon Finance Unit encourages the seller to make an informed decision based on sufficient understanding of the relative risks and price trade-offs of selling VERs vs. CERs. In VER contracts, buyers assume all carbon-specific risks described above, and payment is made once the ERs are verified by the UN-accredited verifier. In CER/ERU contracts, the seller usually assumes a larger component - if not all – of the carbon risks. In such contracts, payment is typically being made upon delivery of the CER/ERU. For more information about Pricing and Risk, see “[Risk and Pricing in CDM/JI Market, and Implications on Bank Pricing Guidelines for Emission Reductions](#)”.

and other pollution.	
GLOBAL BENEFITS Describe if other global benefits than greenhouse gas emission reductions can be attributed to the project.	
SOCIO-ECONOMIC ASPECTS	
What social and economic effects can be attributed to the project and which would not have occurred in a comparable situation without that project? Indicate the communities and the number of people that will benefit from this project. <i>About ¼ page</i>	- Saving in energy expenses; - thus allowing money for other commodities - Better social life for the communities
What are the possible direct effects (e.g. employment creation, provision of capital required, foreign exchange effects)? <i>About ¼ page</i>	Jobs creation will benefit from the project.
What are the possible other effects (e.g. training/education associated with the introduction of new processes, technologies and products and/or the effects of a project on other industries)? <i>About ¼ page</i>	- Positive impact on business, on schools, churches etc due to more reliable energy services.
ENVIRONMENTAL STRATEGY/ PRIORITIES OF THE HOST COUNTRY A brief description of the project's consistency with the environmental strategy and priorities of the Host Country <i>About ¼ page</i>	Energy conservation and substitution is major component of the “Energy sector Development Plan elaborated by the Ministry of Public Works in collaboration with the Bureau of Mines and Energy and Electricity of Haiti. Also, Environmental Protection Plan under the Ministry of Environment considers energy saving as a major player.

PIN 4: Réhabilitation de la Centrale Hydroélectrique de Péligre

REPUBLIC OF HAITI

Project Idea Note
(PIN)

Name of the Consultant: Jean Marie DESCORBETH

Name of Project: Rehabilitation of PELIGRE Hydro Power ‘
Plant

Date submitted: Juillet 2008

PROJECT DESCRIPTION, TYPE, LOCATION AND SCHEDULE

OBJECTIVE OF THE PROJECT <i>Describe in not more than 5 lines</i>	The Objective of the project activity is the rehabilitation of Hydro power plant to recover the yearly electrical energy production capacity in order to reduce partly the electricity suppressed demand.
PROJECT DESCRIPTION AND PROPOSED ACTIVITIES <i>About ½ page</i>	The proposed project activity consists of repairing the protecting screen of the intake and rehabilitating the three turbines which global availability has decreased due to frequent stops for repairs leading to a decrease of the available power generation capacity. To achieve this objective, the following activities will be performed: 1. Dragging of the reservoir to remove sands, soils and other sediments in the purpose of increasing the reservoir capacity. 2. Rehabilitation of the turbines 3. Reconditioning of the protecting screen 4. Protection of the reservoir to avoid sediments from the watershed.
TECHNOLOGY TO BE EMPLOYED⁹ <i>Describe in not more than 5 lines</i>	The turbines have to be protected against future pollution due to sands, soils and watershed using available up-to-date technology. Their rehabilitation has to be done with respect to specific standards as well as operating and maintenance procedures.
TYPE OF PROJECT	
Greenhouse gases targeted CO ₂ /CH ₄ /N ₂ O/HFCs/PFCs/SF ₆ <i>(mention what is applicable)</i>	CO ₂
Type of activities Abatement/CO ₂ sequestration	Abatement of GHG
Field of activities <i>(mention what is applicable)</i> <i>See annex 1 for examples</i>	1e Renewable Hydro
LOCATION OF THE PROJECT	
Country	HAITI
City	Mirebalais
Brief description of the location of the project <i>No more than 3-5 lines</i>	Latitude: 18° 54' 20'' N Longitude : 72° 02' 50'' W Distance and situation from Port-au-Prince : 52 km linear Map
PROJECT PARTICIPANT	
Name of the Project Participant	Electicité d'Haïti (EDH)
Role of the Project Participant	e. <u>Project Operator</u> f. <u>Owner of the site or project</u> g. <u>Owner of the emission reductions</u> h. <u>Seller of the emission reductions</u> i. Project advisor/consultant j. <u>Project investor</u>

⁹ Please note that support can only be provided to projects that employ commercially available technology. It would be useful to provide a few examples of where the proposed technology has been employed.

Organizational category	k. Other, please specify: _____ b. Government c. <u>Government agency</u> d. Municipality e. Private company f. Non Governmental Organization g. Other, please specify: _____
Contact person	Alix Dominique ALEXIS
Address	Angles Rues Pavée et Magasin de l'Etat
Telephone/Fax	(509) 22 23 55 40
E-mail and web address, if any	Aldoni16@yahoo.com.mx
Main activities <i>Describe in not more than 5 lines</i>	The law of August 9, 1971, has established the "Electricité d'Haïti" (EDH) as an autonomous state-owned, vertically integrated enterprise with the monopoly of the production, transmission, distribution and commercialization of electricity throughout the country. Ed'H is reporting to the Ministry of Public Works , Transports ad Communications who names its board of Directors.
Summary of the financials <i>Summarize the financials (total assets, revenues, profit, etc.) in not more than 5 lines</i>	During the year 2006-2007, Ed'H expenses (142,109,443.96 USD) are higher than its revenues (51,113,973.13 USD) leading to a deficit of (90,995,470.83 USD) due mainly to electricity thefts and unrecovered bills. 1 USD = 39 gourdes
Summary of the relevant experience of the Project Participant <i>Describe in not more than 5 lines</i>	- Construction and operation of thermal and renewable electric plants mainly mini hydroelectric plants - Construction of transmission and distribution lines in isolated and integrated grids - Maintenance of all the system including plants, transformers and grids - managing more than 130.000 clients
<i>Please insert information for additional Project Participants as necessary.</i>	
EXPECTED SCHEDULE	
Earliest project start date <i>Year in which the plant/project activity will be operational</i>	Early 2010
Estimate of time required before becoming operational after approval of the PIN	Time required for financial commitments: __ months Time required for legal matters: __ months Time required for construction: <u>18</u> months
Expected first year of CER/ERU/VERs delivery	2010
Project lifetime <i>Number of years</i>	30 years
For CDM projects: Expected Crediting Period <i>7 years twice renewable or 10 years fixed</i>	7 years twice renewable
For JI projects: Period within which ERUs are to be earned (<i>up to and</i>	

including 2012)	
Current status or phase of the project <i>Identification and pre-selection phase/opportunity study finished/pre-feasibility study finished/feasibility study finished/negotiations phase/contracting phase etc. (mention what is applicable and indicate the documentation)</i>	Contracting phase (Source: EDH)
Current status of acceptance of the Host Country <i>Letter of No Objection/Endorsement is available; Letter of No Objection/Endorsement is under discussion or available; Letter of Approval is under discussion or available (mention what is applicable)</i>	DNA is in the process of being implemented
The position of the Host Country with regard to the Kyoto Protocol	Has the Host Country ratified/acceded to the Kyoto Protocol? <u>YES, YEAR:06 July 2005</u> Has the Host Country established a CDM Designated National Authority / JI Designated Focal Point? <u>NO</u>

E. METHODOLOGY AND ADDITIONALITY

ESTIMATE OF GREENHOUSE GASES ABATED/ CO₂ SEQUESTERED <i>In metric tons of CO₂-equivalent, please attach calculations</i>	Annual (if varies annually, provide schedule):100,000 tCO ₂ -equivalent Up to and including 2012: 300,000 tCO ₂ -equivalent Up to a period of 10 years:1,000,000 tCO ₂ -equivalent Up to a period of 7 years: 700,000 tCO ₂ -equivalent
BASELINE SCENARIO CDM/JI projects must result in GHG emissions being lower than “business-as-usual” in the Host Country. At the PIN stage questions to be answered are at least: Which emissions are being reduced by the	The baseline scenario is determined as the actual and historical emissions of the grid accounting for future power plants to be built in the BM part of the EF calculation as recommended by ACM0002. Emissions of displaced operating power plants at the margin Emissions of power plants which construction will be delayed. All the actual power plants would have produced electricity as in the actual scenario and additional power plants using the same technology than the last constructed one would have been in operation.

proposed CDM/JI project? What would the future look like without the proposed CDM/JI project? About ¼ - ½ page	
ADDITIONALITY Please explain which additionality arguments apply to the project: (i) there is no regulation or incentive scheme in place covering the project (ii) the project is financially weak or not the least cost option (iii) country risk, new technology for country, other barriers (iv) other	Extended down time of the hydro power plant that is the unique low cost must run power plant of the metropolitan region grid will lead to: - The acquisition and operation of alternative fossil fuel based power project. This constitutes a barrier for the government that does not have the financial leverage needed to face electricity demand. This can be illustrated by the actual policy of buying energy instead of building new power plants. The same applies for power plants rehabilitation. - Although the proposed CDM project activity is profitable, local financial institution will not accept to support EDH in implementing this project due to its financial standing. So only the government will have an interest to support this type of project from EDH for political reasons. However, the government financial resources are scarce and it faces many other priorities as health, education poverty alleviation. In the absence of the project registered as a CDM project, there will be no incentives for the government to allocate sufficient funds to implement such rehabilitation project. This is also demonstrated by the prevailing practice characterized by a lack of maintenance of these installations.
SECTOR BACKGROUND Please describe the laws, regulations, policies and strategies of the Host Country that are of central relevance to the proposed project, as well as any other major trends in the relevant sector. Please in particular explain if the project is running under a public incentive scheme (e.g. preferential tariffs, grants, Official Development Assistance) or is required by law. If the project is already in operation, please describe if CDM/JI revenues were considered in project planning.	The current electricity regulation includes the liberalization of electricity generation but the distribution and commercialization are under the monopoly of EDH. So, in the context of finance scarcity, the government policy is to encourage private investment in the energy sector that will help to realize the needed investments in this sector. Instead of constructing new power plants or rehabilitation of the existing power plants, the strategy of the national electricity company is more and more to buy electricity from IPPs.
METHODOLOGY Please choose from the	The proposed project can use ACM0002

following options: For CDM projects: (i) project is covered by an existing Approved CDM Methodology or Approved CDM Small-Scale Methodology (ii) project needs a new methodology (iii) projects needs modification of existing Approved CDM Methodology For JI projects: (iv) project will use a baseline and monitoring plan in accordance with Appendix B of the JI Guidelines and further JISC guidance (V) project will use Approved CDM or CDM Small-Scale Methodology	
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F. FINANCE

TOTAL CAPITAL COST ESTIMATE (PRE-OPERATIONAL)	
Development costs	___ US\$ million (Feasibility studies, resource studies, etc.)
Installed costs	___ US\$ million (Property plant, equipment, etc.)
Land	___ US\$ million
Other costs (please specify)	___ US\$ million (Legal, consulting, etc.)
Total project costs	_897,435.90 US\$
SOURCES OF FINANCE TO BE SOUGHT OR ALREADY IDENTIFIED	
Equity	
Name of the organizations, status of financing agreements	

and finance (in US\$ million)	
Debt – Long-term	
Name of the organizations, status of financing agreements and finance (in US\$ million)	
Debt – Short term	
Name of the organizations, status of financing agreements and finance (in US\$ million)	
Carbon finance advance payments ¹⁰ sought from the World Bank carbon funds. (US\$ million and a brief clarification, not more than 5 lines)	
SOURCES OF CARBON FINANCE Name of carbon financiers other than any of the World Bank carbon funds that your are contacting (if any)	
INDICATIVE CER/ERU/VER PRICE PER tCO₂e¹¹ <i>Price is subject to negotiation. Please indicate VER or CER preference if known.¹²</i>	
TOTAL EMISSION REDUCTION PURCHASE AGREEMENT (ERPA) VALUE	
A period until 2012 (end of the first commitment period)	3,000,000.00 €
A period of 10 years	10,000,000.00 €
A period of 7 years	7,000,000.00 €

¹⁰ Advance payment subject to appropriate guarantees may be considered.

¹⁰ Please also use this figure as the carbon price in the PIN Financial Analysis Model (cell C94).

¹⁰ The World Bank Carbon Finance Unit encourages the seller to make an informed decision based on sufficient understanding of the relative risks and price trade-offs of selling VERs vs. CERs. In VER contracts, buyers assume all carbon-specific risks described above, and payment is made once the ERs are verified by the UN-accredited verifier. In CER/ERU contracts, the seller usually assumes a larger component - if not all – of the carbon risks. In such contracts, payment is typically being made upon delivery of the CER/ERU. For more information about Pricing and Risk, see [“Risk and Pricing in CDM/JI Market, and Implications on Bank Pricing Guidelines for Emission Reductions”](#).

Please provide a financial analysis for the proposed CDM/JI activity, including the forecast financial internal rate of return for the project with and without the Emission Reduction revenues. Provide the financial rate of return at the Emission Reduction price indicated in section “Indicative CER/ERU/VER Price”. DO NOT assume any up-front payment from the Carbon Finance Unit at the World Bank in the financial analysis that includes World Bank carbon revenue stream.

Provide a spreadsheet to support these calculations. The [PIN Financial Analysis Model](http://www.carbonfinance.org) available at www.carbonfinance.org is recommended.

G. EXPECTED ENVIRONMENTAL AND SOCIAL BENEFITS

LOCAL BENEFITS E.g. impacts on local air, water and other pollution.	This project will lead to a better control of the flows during the raining seasons and thus facilitate the irrigation process for agricultural purposes.
GLOBAL BENEFITS Describe if other global benefits than greenhouse gas emission reductions can be attributed to the project.	
SOCIO-ECONOMIC ASPECTS	
What social and economic effects can be attributed to the project and which would not have occurred in a comparable situation without that project? Indicate the communities and the number of people that will benefit from this project. <i>About ¼ page</i>	Stabilization in the generation of electricity facilities will lead to a) better infrastructures, b) market development c) progress in Tourism development d) Industrial development and e) It really stops community exodus.
What are the possible direct effects (e.g. employment creation, provision of capital required, foreign exchange effects)? <i>About ¼ page</i>	Creation of jobs Increase of revenues of the community
What are the possible other effects (e.g. training/education associated with the introduction of new processes, technologies and products and/or the effects of a project on other industries)? <i>About ¼ page</i>	The staff of EDH will be trained on the current best practices for the maintenance and exploitation of an hydroelectricity power plant.
ENVIRONMENTAL STRATEGY/ PRIORITIES OF THE HOST COUNTRY A brief description of the project’s consistency with the	The Environmental Action Plan together with the Electricity Development Plan and the Energy Sector Development Plan describe the mains strategies of the State regarding the development of renewable energy including hydroelectricity. The project is in direct line with these strategies.

environmental strategy and priorities of the Host Country <i>About ¼ page</i>	
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PIN 5 Dissemination of improved stoves

PROJECT IDEA NOTE (PIN)

Name of Project: Dissemination of improved stoves

Date submitted: _____

Description of size and quality expected of a PIN

Basically a PIN will consist of approximately 5-10 pages providing indicative information on:

- the type and size of the project
- its location
- the anticipated total amount of greenhouse gas (GHG) reduction compared to the “business-as-usual” scenario (which will be elaborated in the baseline later on at Project Design Document (PDD) level)
- the suggested crediting life time
- the suggested Certified Emission Reductions (CERs)/Emission Reduction Units (ERUs)/Verified Emission Reduction (VERs) price in US\$ or € /ton CO₂e reduced
- the financial structuring (indicating which parties are expected to provide the project’s financing)
- the project’s other socio-economic or environmental effects/benefits

While every effort should be made to provide as complete and extensive information as possible, it is recognised that full information on every item listed in the template will not be available at all times for every project.

NOTE: For forestry projects, please use the PIN Template for LULUCF projects available at www.carbonfinance.org.

H. PROJECT DESCRIPTION, TYPE, LOCATION AND SCHEDULE

OBJECTIVE OF THE PROJECT <i>Describe in not more than 5 lines</i>	The project will promote the production and dissemination of improved charcoal stoves to be used by middle class urban households and with a particular emphasis on product recognition and quality control. The development objective of the project is thus to assist small private enterprises to develop a better infrastructure in producing efficient stoves that would reduce the cost of cooking for urban households.
PROJECT DESCRIPTION AND PROPOSED ACTIVITIES <i>About ½ page</i>	The project will be built upon the household energy's strategy as described in the GOH/ESMAP report (07/2005) "Haiti: Reducing pressure on natural resource through demand side management action" The immediate objective is to induce a sustainable production and demand of energy efficient stoves in Haiti. The main target is Port-au-Prince. Charcoal consumption was estimated about 400 000 t in 2004 for the value of US\$150 million. About 416 000 households were estimated in Port-au-Prince and suburbs area for a population of 2 millions people. And 80% of these people use charcoal's stoves buying about 400 000 charcoal's stoves a year. There are currently some 300 to 500 handmade charcoal's stoves producers and Small and medium enterprises (SME) do not exist yet in this field. At the end of the project, at least 100 of artisans and/or 5-10 SME will be opened for business to produce more than 5 000 new improved charcoal stoves a year. Consequently, the charcoal consumption will likely be reduced. The projected production would annually and progressively replace 35 000 t of charcoal, thus about 10 % of nationwide production. The project will support the following activities: • Capacity's building: Training of prospected stove producers • Business ' support services - Technical advice on production process – access to microfinance • Quality Control - Development of an Eco Label (QEEL) or Quality and energy - Efficiency Label for the new stoves named Mirak Stoves(Miracle's Stoves) • Awareness Rising (Marketing Strategy) - Includes market 'demonstrations, animated trials, TV and radio - Publicity, news papers and so on. • Regulation and support - Including tax (VAT) breaks for QEEL equipment and raw material (steel) or producers of such equipment • Scaling –up - Promoting scale- up of successful business models such as producer associations, cooperatives, etc.. • Impact monitoring and evaluation

	Based on indicators like stove sales, prices applied, number of trained producers, charcoal consumption, etc
TECHNOLOGY TO BE EMPLOYED¹³ <i>Describe in not more than 5 lines</i>	The commercially technology is now available. A number of efficient stove activities have taken place in Haiti, in the past twenty years but they did not continue to do so once the original project sponsoring by HERA program was completed. What to be done now is to: ➤ distinguish physically improved stoves from old fashion made stoves ➤ define a good quality of the product ➤ organize the awareness program to make the whole process more comprehensive.
TYPE OF PROJECT	
Greenhouse gases targeted CO ₂ /CH ₄ /N ₂ O/HFCs/PFCs/SF ₆ <i>(mention what is applicable)</i>	CO2
Type of activities Abatement/CO ₂ sequestration	Abatement: The project uses improved stoves to reduce charcoal consumption
Field of activities <i>(mention what is applicable)</i> <i>See annex 1 for examples</i>	
LOCATION OF THE PROJECT	
Country	Haiti
City	Metropolitan region of Port-au-Prince
Brief description of the location of the project <i>No more than 3-5 lines</i>	The project activity will cover the metropolitan region of Port au Prince. Port au Prince est situé au niveau du golf de la gonave Latitude Nord : 18 :53 :00 Longitude Ouest : 72 :33 :00
PROJECT PARTICIPANT	
Name of the Project Participant	Bureau des Mines et de l'Énergie (BME) as a Government Agency
Role of the Project Participant	l. Owner of the site or project m. Owner of the emission reductions n. Seller of the emission reductions o. Project investor
Organizational category	h. Government
Contact person	Ing. Dieuseul Anglade, General Manager
Address	Delmas 19, Rue Nina No. 14 . P.A.P. Haiti

¹³ Please note that support can only be provided to projects that employ commercially available technology. It would be useful to provide a few examples of where the proposed technology has been employed.

Telephone/Fax	509-22462853 509-22461517; 509-22462240 509-22462459
E-mail and web address, if any	bme@bme.gouv.ht or dsanglade@yahoo.com http : //www.bme.gouv.ht
Main activities <i>Describe in not more than 5 lines</i>	The BME is an autonomous governmental agency operating under the MTPTC (Ministry of Public Works, Transportation and Communications). It is in charge of mining and energy department
Summary of the financials <i>Summarize the financials (total assets, revenues, profit, etc.) in not more than 5 lines</i>	
Summary of the relevant experience of the Project Participant <i>Describe in not more than 5 lines</i>	
PROJECT PARTICIPANT	
Name of the Project Participant	
Role of the Project Participant	b. Project Operator c. Owner of the site or project d. Owner of the emission reductions e. Seller of the emission reductions f. Project advisor/consultant g. Project investor h. Other, please specify: _____
Organizational category	a. Government b. Government agency c. Municipality d. Private company e. Non Governmental Organization f. Other, please specify: _____
Contact person	
Address	
Telephone/Fax	
E-mail and web address, if any	
Main activities <i>Describe in not more than 5 lines</i>	
Summary of the financials <i>Summarize the financials (total assets, revenues, profit, etc.) in not more than 5 lines</i>	
Summary of the relevant experience of the Project Participant <i>Describe in not more than 5 lines</i>	
<i>Please insert information for additional Project Participants as necessary.</i>	

I. METHODOLOGY AND ADDITIONALITY

ESTIMATE OF GREENHOUSE GASES ABATED/CO₂ SEQUESTERED <i>In metric tons of CO₂-equivalent, please attach calculations</i>	Annual (if varies annually, provide schedule): __63 063__ tCO₂-equivalent Up to and including 2012: __ tCO₂-equivalent Up to a period of 10 years: __ tCO₂-equivalent Up to a period of 7 years: __ tCO₂-equivalent
BASELINE SCENARIO CDM/JI projects must result in GHG emissions being lower than “business-as-usual” in the Host Country. At the PIN stage questions to be answered are at least: • Which emissions are being reduced by the proposed CDM/JI project? • What would the future look like without the proposed CDM/JI project? <i>About ¼ - ½ page</i>	In the baseline scenario, traditional cooking stoves are used by more than 90% of the households. Due to the higher cost of the energy efficient stove, all the projects implemented so far have no success. The use of CDM revenues as subsidies to improve the production process and decrease the cost will help implement this proposed project activity.
ADDITIONALITY Please explain which additionality arguments apply to the project: (i) there is no regulation or incentive scheme in place covering the project (ii) the project is financially weak or not the least cost option (iii) country risk, new technology for country, other barriers (iv) other	Without CDM revenues, the proposed project activities will not be implemented. The government has other priorities and cannot subsidy the production process. In the absence of CDM revenues, the cost of the efficient cooking stove will be too high and not affordable to the population as in prevailing practices.
SECTOR BACKGROUND Please describe the laws, regulations, policies and strategies of the Host Country that are of central relevance to the proposed project, as well as any other major trends in the relevant sector. Please in particular explain if the project is running under a	The country has carried out various measures and public policies to promote a sustainable development in last twenty years. In 1995, the Ministry of Environment was created and in the year 2000, the first Environmental action plan also was published. All the environmental laws were codified in the same time by both UNDP and ONG sector. The Republic of Haiti has signed and ratified all RIO environmental treaties including the UNCC and Kyoto Protocol. During the period considered, the country periodically defines his charcoal production strategy with the ESMAP program and has no resource to implement it. The newly elected President now intends to stimulate Haiti’s foundering economy through a revitalization of small farmer households that make

public incentive scheme (e.g. preferential tariffs, grants, Official Development Assistance) or is required by law. If the project is already in operation, please describe if CDM/JI revenues were considered in project planning.	up two thirds of the economy.
METHODOLOGY Please choose from the following options: For CDM projects: (i) project is covered by an existing Approved CDM Methodology or Approved CDM Small-Scale Methodology (ii) project needs a new methodology (iii) projects needs modification of existing Approved CDM Methodology For JI projects: (iv) project will use a baseline and monitoring plan in accordance with Appendix B of the JI Guidelines and further JISC guidance (V) project will use Approved CDM or CDM Small-Scale Methodology	AMS II G

J. FINANCE

TOTAL CAPITAL COST ESTIMATE (PRE-OPERATIONAL)	
Development costs	___ US\$ million (Feasibility studies, resource studies, etc.)
Installed costs	___ US\$ million (Property plant, equipment, etc.)
Land	___ US\$ million
Other costs (please specify)	___ US\$ million (Legal, consulting, etc.)
Total project costs	___ US\$ million
SOURCES OF FINANCE TO BE SOUGHT OR ALREADY IDENTIFIED	
Equity Name of the organizations, status of financing agreements and finance (in US\$ million)	The project is a three years one with a total budget of US \$ million 0,390. He has six component described as followed: training, quality control, awareness raising, regulation and Standardization, business support and impact monitoring The requested funding amount is provided by the ESMAP

	The project seeks access to carbon finance advance from the World Bank Carbon Funds.
Debt – Long-term Name of the organizations, status of financing agreements and finance (in US\$ million)	
Debt – Short term Name of the organizations, status of financing agreements and finance (in US\$ million)	
Carbon finance advance payments ¹⁴ sought from the World Bank carbon funds. (US\$ million and a brief clarification, not more than 5 lines)	
SOURCES OF CARBON FINANCE Name of carbon financiers other than any of the World Bank carbon funds that your are contacting (if any)	
INDICATIVE CER/ERU/VER PRICE PER tCO₂e¹⁵ <i>Price is subject to negotiation. Please indicate VER or CER preference if known.¹⁶</i>	
TOTAL EMISSION REDUCTION PURCHASE AGREEMENT (ERPA) VALUE	
A period until 2012 (end of the first commitment period)	___ US\$ / €
A period of 10 years	___ US\$ / €
A period of 7 years	___ US\$ / €

¹⁴ Advance payment subject to appropriate guarantees may be considered.

¹⁵ Please also use this figure as the carbon price in the PIN Financial Analysis Model (cell C94).

¹⁶ The World Bank Carbon Finance Unit encourages the seller to make an informed decision based on sufficient understanding of the relative risks and price trade-offs of selling VERs vs. CERs. In VER contracts, buyers assume all carbon-specific risks described above, and payment is made once the ERs are verified by the UN-accredited verifier. In CER/ERU contracts, the seller usually assumes a larger component - if not all – of the carbon risks. In such contracts, payment is typically being made upon delivery of the CER/ERU. For more information about Pricing and Risk, see [“Risk and Pricing in CDM/JI Market, and Implications on Bank Pricing Guidelines for Emission Reductions”](#).

Please provide a financial analysis for the proposed CDM/JI activity, including the forecast financial internal rate of return for the project with and without the Emission Reduction revenues. Provide the financial rate of return at the Emission Reduction price indicated in section “Indicative CER/ERU/VER Price”. DO NOT assume any up-front payment from the Carbon Finance Unit at the World Bank in the financial analysis that includes World Bank carbon revenue stream.

Provide a spreadsheet to support these calculations. The [PIN Financial Analysis Model](http://www.carbonfinance.org) available at www.carbonfinance.org is recommended.

K. EXPECTED ENVIRONMENTAL AND SOCIAL BENEFITS

LOCAL BENEFITS E.g. impacts on local air, water and other pollution.	This includes better health and sanitation at the household level for those who use an improved stove. The project also reduces the consumption of charcoal and yield less ash and smoke emissions and would thereby contribute to lowering respiratory diseases or illnesses. The general sanitary conditions in the Kitchen become better
GLOBAL BENEFITS Describe if other global benefits than greenhouse gas emission reductions can be attributed to the project.	The proposed project contributes to reduce deforestation due to reduce off take trees for charcoal making. Reducing three removals has demonstrated impact on watersheds condition and on the global environment.
SOCIO-ECONOMIC ASPECTS	
What social and economic effects can be attributed to the project and which would not have occurred in a comparable situation without that project? Indicate the communities and the number of people that will benefit from this project. <i>About ¼ page</i>	At the end of the project, at least 100 artisans and/or 10 -20 SME, will be in the business of manufacturing energy efficient stoves. It is expected that on the order of 100 000 improve charcoal stoves will need to be produced per year to approach a sustainable production level. Direct job creation can be raised up to 300 including artisans/producers, transporters, whole salers and distributors
What are the possible direct effects (e.g. employment creation, provision of capital required, foreign exchange effects)? <i>About ¼ page</i>	
What are the possible other effects (e.g. training/education associated with the introduction of new processes, technologies and products and/or the effects of a project on other industries)? <i>About ¼ page</i>	
ENVIRONMENTAL STRATEGY/ PRIORITIES OF THE HOST COUNTRY A brief description of the	In the 2000 Environmental Action Plan (EAP), it is expected to reduce charcoal production and consequently the trend of deforestation. One of the high priority defined in the EAP strategy part related to energy and sustainable development is to promote improved stoves production in the

project's consistency with the environmental strategy and priorities of the Host Country <i>About ¼ page</i>	ten years.
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PIN 6 : Amélioration des techniques de carbonisation

REPUBLIC OF HAITI

Project Idea Note (PIN)

Jean André Victor, Consultant

Name of Project

Improving charcoaling process

Date submitted

September of 2008

A.- Project Description, Type, Location and Schedule

1.- Objective of the Project

The project will allow avoiding the methane release from charcoal production by shifting from traditional open-ended methods to mechanized charcoaling process. Its general objective is to contribute to reduce the firewood demand for charcoal production by improving the yield of the process.

2. Project Description and Proposed Activities

In Haiti, the charcoal production is rising up to 400 000 t a year with a total of 45 000 producers and a cash flow of US\$150 millions on the market place of Port-au-Prince representing 80% of the national consumption. The idea is to use a mechanized charcoaling process instead of the traditional open-ended method. To do so, an Adams Stove will be used with no methane emission. In order to allow successfully the technological transition, proper training will be proceeding to producers. Technical assistance also will be offered to reinforce several organizations getting together all of the well trained producers. Credit line will be available to the users in order to facilitate the original investment to set up the enterprise but no direct subsidies will allocate to producers. Finally, awareness campaign will be necessary to promote sound decision making from public and private sectors involved in the project.

3.- Technology to be employed

The Adams Stove will be used in the first time because of safety and guaranty. It produces more or less 25 kg of charcoal for 100kg of wood (or a yield of 25%). In the project meantime, another model of stove (Casamance Dromart-Moreau –Pierce) will be tested. By products like several types of combustible could be recuperated by the end of the production process.

4.- Type of Project

The methane (CH₄) is the greenhouse gas targeted.

5.- Location of the Project

The project will cover all the territory of Haïti and represents a total of 50 Adams stoves distributed proportionally to greater production area of the raw material in order to reduce the cost of transportation.

6.- Project Participant

The Government agencies in charge of the project are the Ministry of the Environment (MDE) and the Office of Mining and Energy (BME). The beneficiaries are the charcoal past producers selected on the basis of the know-how, interest and other needful facilities. Project advisor and private firm could be chosen for the project execution.

Contact persons

Daniel Brisard
Executive Director
Ministry of Environment
Phone : 509- 2256 9957

Dieuseul Anglade
General Manager
Mining and Energy Department
Delmas 19, Rue des Nimes , No 14, Port-
au-Prince,Haiti
509- 2246 2248 509 2246 2853

7.- Expected Schedule

The project document is not available now so either the starting date nor the time required before becoming operational after approval of the PIN could not be estimated.

Nevertheless, we suggest a project lifetime of three years. Now that the host country seems to be interested in such project, it would be useful to draft the project document.

- With regard to the Kyoto Protocol
Ratified by 1996
- With regard to CDM Designated National Authority
In charge since September 2008

B.- Methodology and Addition

1. Estimated of Greenhouse gases abated or CO₂ sequestered

$RE = ELB - EP$
If $EP = 0$
Thus $RE = ELB$

- RE = 87500 T of CO₂ eq.
 Annual 87 500t CO₂ equivalent
- Up to and including 2012
 - Up to a period of 10 years
 - Up to a period of 7 years

2. Baseline Scenario

The methodology applicable is the AMS 111 K . <<Avoidance of methane release from charcoal production by shifting from traditional open ended methods to mechanized charcoaling process>>.

(See Annex I for calculation)

C.- Finance

1.- Sources of finance have not been identified. Now, the project costs are US\$2 millions (first estimation) including the land cost , the purchase of Adams stove, the installation and the development costs.

2. Sources of Carbon Finance

The World Bank Carbon Funds

3. Indicative price per tCO₂

10 Euros

4.- Total Emission Reduction Purchase Agreement Value

- A period until 2012 ----- E 1.750.000 annually
- A period of 10 years -----E 17 500.000
- A period of 7 years -----E 11 250.000
 (10E /tone CO₂ eq.)

D. Expected Environmental and Social Benefits

1.- Local Benefits

Three main results could be expected of the Project :

- Growth of the labor productivity per capital
- Growth of the revenue of the producer
- Initiation of the technological transition in that field of production

The mechanization of charcoaling process will allow to create new type of job and new behavior within the rural society including the possibility to produce the raw material on the commercial basis.

2.- Global Benefit

More productivity, more production. The charcoal price will fall down and traditional producers progressively will disappear. The increasing of process production yield also will reduce the cut off of trees for charcoal making. Positive impact on deforestation and soil erosion is obvious calling up sustainable environmental managing for natural resources conservation and better watersheds conditions. By products from charcoaling process can be sold in open markets as other commodities.

3.- Socio-Economic Aspects

The proposed project could pave the way in creating new jobs in the economic sector services. Ecotourism and agrotourism could grow up because of better global environment. Without the project, it would be unrealistic to develop production of appropriate trees for raw material to charcoaling process because of lack of corresponding demand. With the project, it would be possible to do so because of the existence of new open market of raw material. The introduction of new technologies in this field will have positive impact on other correlated industries.

4.- Environmental Strategy / Priorities of the Host Country

The trend of growing international prices of petroleum and the lack of own energetical resources explain the high economic vulnerability of Haiti. So, the country will go on, in the near future, to use charcoal like main domestic combustible for cooking. Modernizing the charcoaling process is part of significant way to improve the energetical autonomy of the country.

PIN 7 : Développement du jatropha- biocarburant

REPUBLIC OF HAITI

PROJECT IDEA NOTE (PIN)

Name of Consultant: Hans CHARLES

Name of Project: Développement de la filière "Huile Végétale Pure de Jatropha" dans le bassin versant de la rivière Montrouis, Haïti

Date submitted: Juin 2008

L. PROJECT DESCRIPTION, TYPE, LOCATION AND SCHEDULE

OBJECTIVE OF THE PROJECT <i>Describe in not more than 5 lines</i>	The project goal is to contribute to improve the farmers' income in the 8th section of Montrouis, By producing biodiesel to supply 20% of the Hotels monthly imported fuel consumption and restoring the Montrouis River watershed thru planting of biodiesel trees like Jatropha.
PROJECT DESCRIPTION AND PROPOSED ACTIVITIES <i>About ½ page</i>	The biodiesel will be produced from indigenous crop Jatropha Curcas grown naturally in the Montrouis watershed. The oil will serve as supply for the generators of the hotels in the tourist area. It will be also used in the jatropha processing plant and other agro-transformations activities. Component 1. Production and processing of Jatropha Expected output: Jatropha-based fences become a source of wealth per se and create the conditions for agricultural intensification. Activities: settling nurseries, technical training, building and equipping a small facility for Jatropha process Component 2. Selling of oil to the Main Hotels in the tourist area Expected output: Electricity produced with Jatropha oil. Activities: transformation and distribution Component 3. Support to management and market links Expected output: productive activities are sustainable from the institutional, economical and financial points of views). Activities: training in management and marketing, supply of small marketing material.
	In the beginning of the Project, Jatropha trees will be use as fences

TECHNOLOGY TO BE EMPLOYED¹⁷ <i>Describe in not more than 5 lines</i>	around the farms to increase the biodiesel crop availability. The oil, extracted at cold temperature with the electric press, will be used in the diesel generators of the hotels.
TYPE OF PROJECT	
Greenhouse gases targeted CO ₂ /CH ₄ /N ₂ O/HFCs/PFCs/SF ₆ <i>(mention what is applicable)</i>	CO2 Emission Reduction, fossil fuel displacement
Type of activities Abatement/CO ₂ sequestration	Abatement CO2
Field of activities <i>(mention what is applicable)</i> <i>See annex 1 for examples</i>	Biodiesel generation Blends of biodiesel for power supply Reduction of diesel consumption in the generators of the hotels
LOCATION OF THE PROJECT	
Country	Haiti
City	8 th Section Montrouis, Frettas
Brief description of the location of the project <i>No more than 3-5 lines</i>	The area of intervention of the project is the 8th municipal section of Montrouis named Frettas in approximately 800 meters altitude, and located 12km upstream to the pond overturning of Montrouis (70km in the North of the capital Port-au-Prince)
PROJECT PARTICIPANT	
Name of the Project Participant	Fondation Haitienne de l'Environnement (FHE)
Role of the Project Participant	Project Operator Owner of the emission reductions Seller of the emission reductions Project co-investor
Organizational category	Non Governmental Organization
Contact person	Tanguy ARMAND
Address	24, rue Mangones et Chavannes, Berthe, Petion-Ville, Haiti
Telephone/Fax	509 2257-0816/ fax idem
E-mail and web address, if any	fhenvironnement@yahoo.fr
Main activities <i>Describe in not more than 5 lines</i>	Main Activities: Projects development. The Executing Agency is the "Fondation Haïtienne de l'Environnement" (FHE), a formally recognized Haitian Foundation (non-governmental organism) funded in 1999 and headed by a Board; its mission is to promote environmental protection, sustainable water use and renewable energies. Its main goal is to collect funds and use them to execute development project.
Summary of the financials <i>Summarize the financials (total assets, revenues, profit,</i>	The stockholders' equity of the FHE, clear of any obligations, amounts to the equivalent of \$US40,000, from contributions of subsidy and members. It collects expenses of service on all the projects implemented

¹⁷ Please note that support can only be provided to projects that employ commercially available technology. It would be useful to provide a few examples of where the proposed technology has been employed.

<i>etc.) in not more than 5 lines</i>	for organizations as the USAID, the European Union to cover its running costs.
Summary of the relevant experience of the Project Participant <i>Describe in not more than 5 lines</i>	Because its main activity is management, FHE has a long experience in project management and the capacity to carry out any kind of project in the environmental sector. The equipment will be installed by contractors and the sponsors will offer technical assistance for the local managers.
EXPECTED SCHEDULE	
Earliest project start date <i>Year in which the plant/project activity will be operational</i>	The project is expected to launch in September 2008 and to be completed within 12 months
Estimate of time required before becoming operational after approval of the PIN	12 months
Expected first year of CER/ERU/VERs delivery	2010
Project lifetime <i>Number of years</i>	21 years
For CDM projects: Expected Crediting Period <i>7 years twice renewable or 10 years fixed</i>	3 times 7 years Because the first jatropha trees will be able to produce oil at the age of 5 years, it will be more useful to have a credit for 3 periods of 7 years.
For JI projects: Period within which ERUs are to be earned (<i>up to and including 2012</i>)	
Current status or phase of the project	The feasibility study is finished. The project just received the acceptance letter from the Japanese funds for a total of 150,000 US\$. Now FHE is in negotiation phase with other potential sponsors for the second part of its budget.
Current status of acceptance of the Host Country	The Host country already includes the project in its pipeline for carbon credit and solicited the preparation of the PIN.
The position of the Host Country with regard to the Kyoto Protocol	The Host Country, Haiti, ratified/acceded to the Kyoto Protocol Kyoto Protocol signed on July 6, 2005 The Host Country, Haiti, is establishing a CDM Designated National Authority / JI Designated Focal Point THE DNA has been created by Ministerial decree on July, 8th 2008

M. METHODOLOGY AND ADDITIONALITY

ESTIMATE OF GREENHOUSE GASES ABATED/ CO₂ SEQUESTERED <i>In metric tons of CO₂-</i>	Annual (if varies annually, provide schedule): 7,547.05 tCO₂-equivalent Up to and including 2012: 15,094.65 tCO₂-equivalent Up to a period of 10 years: 75,473.35 tCO₂-equivalent Up to a period of 7 years: 52,781.35 tCO₂-equivalent
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<i>equivalent, please attach calculations</i>	
BASELINE SCENARIO	Without the production of the fuel from the plant oil, the use of traditional industrial diesel fuel would continue, increasing the emissions of CO ₂ as well as the dependence of Haiti with regard to the imports of fossil fuels.
ADDITIONALITY Please explain which additionality arguments apply to the project: (i) there is no regulation or incentive scheme in place covering the project (ii) the project is financially weak or not the least cost option (iii) country risk, new technology for country, other barriers (iv) other	The project will not be financed by local financial Institutions which never finance such projects due to its revolutionary characters in terms of new technologies versus previous habits. In the Host Country, there is no regulation or incentive scheme covering the project. The project's participant has no obligation to reduce CHG emissions. It is unlikely that the project will benefit from the support of the government due to other priorities such as education, health, hunger etc Financing mechanisms from CDM can then be used to facilitate the implementation of the project
SECTOR BACKGROUND Please describe the laws, regulations, policies and strategies of the Host Country that are of central relevance to the proposed project, as well as any other major trends in the relevant sector. Please in particular explain if the project is running under a public incentive scheme (e.g. preferential tariffs, grants, Official Development Assistance) or is required by law. If the project is already in operation, please describe if CDM/JI revenues were considered in project planning.	The biodiesel is new in Haiti, but the National Action Plan (PAE) adopted in 1999 mentioned the importance of the new sources of energy for the country. The project is in the right lane of that, because it will use a simple and clean technology to produce electricity. The plant oil that will be also used for cooking and help the watershed protection by reducing the pressure on the vegetation. This is the most important environmental issue for the Country. The project is integrated and implemented with the support of local authorities (CASEC, ASEC, MAYOR). It is granted by the JSF Poverty Reduction Program (JPO) Community Based Project (CBP) funds and IDB. The Haitian government and the USAID are also interested in the Project and its intervention area.
METHODOLOGY	The project is covered by an existing Approved CDM Methodology or Approved CDM Small-Scale Methodology

N. FINANCE

TOTAL CAPITAL COST ESTIMATE (PRE-OPERATIONAL)	
Development costs	15,000 US\$ (Feasibility studies, resource studies, etc.)
Installed costs	1.2 US\$ million (Property plant, equipment, etc.)
Land	
Other costs (please specify)	400,000 US\$ million (Legal, consulting, etc.)

Total project costs	1,615,000 US\$
SOURCES OF FINANCE TO BE SOUGHT OR ALREADY IDENTIFIED	
Equity Name of the organizations, status of financing agreements and finance (in US\$ million)	JPO Japanese Government Funds and IDB Interamerican Development Bank 150,000U\$ already available.
Debt – Long-term Name of the organizations, status of financing agreements and finance (in US\$ million)	N/A
Debt – Short term Name of the organizations, status of financing agreements and finance (in US\$ million)	N/A
Carbon finance advance payments ¹⁸ sought from the World Bank carbon funds. (US\$ million and a brief clarification, not more than 5 lines)	N/A
SOURCES OF CARBON FINANCE	World Bank carbon funds
INDICATIVE CER/ERU/VER PRICE PER tCO₂e¹⁹ <i>Price is subject to negotiation. Please indicate VER or CER preference if known.²⁰</i>	
TOTAL EMISSION REDUCTION PURCHASE AGREEMENT (ERPA) VALUE	
A period until 2012 (end of the first commitment period)	36,227.21US\$ / €
A period of 10 years	181,136.00 US\$ / €
A period of 7 years	126,795.23 US\$ / €

¹⁸ Advance payment subject to appropriate guarantees may be considered.

¹⁹ Please also use this figure as the carbon price in the PIN Financial Analysis Model (cell C94).

²⁰ The World Bank Carbon Finance Unit encourages the seller to make an informed decision based on sufficient understanding of the relative risks and price trade-offs of selling VERs vs. CERs. In VER contracts, buyers assume all carbon-specific risks described above, and payment is made once the ERs are verified by the UN-accredited verifier. In CER/ERU contracts, the seller usually assumes a larger component - if not all – of the carbon risks. In such contracts, payment is typically being made upon delivery of the CER/ERU. For more information about Pricing and Risk, see [“Risk and Pricing in CDM/JI Market, and Implications on Bank Pricing Guidelines for Emission Reductions”](#).

Please provide a financial analysis for the proposed CDM/JI activity, including the forecast financial internal rate of return for the project with and without the Emission Reduction revenues. Provide the financial rate of return at the Emission Reduction price indicated in section “Indicative CER/ERU/VER Price”. DO NOT assume any up-front payment from the Carbon Finance Unit at the World Bank in the financial analysis that includes World Bank carbon revenue stream.

Provide a spreadsheet to support these calculations. The [PIN Financial Analysis Model](http://www.carbonfinance.org) available at www.carbonfinance.org is recommended.

O. EXPECTED ENVIRONMENTAL AND SOCIAL BENEFITS

LOCAL BENEFITS E.g. impacts on local air, water and other pollution.	Reduction of emissions of CO, Increase of the infiltration of the water because of the new organized vegetation. Possibility of irrigation from the diversion of the water for the installation of the micro-turbine. Less environmental pollution because of the clean energy from the micro-turbine.
GLOBAL BENEFITS Describe if other global benefits than greenhouse gas emission reductions can be attributed to the project.	Green house gas emission reductions because of the displacement of the fossil fuel by the plant oil.
SOCIO-ECONOMIC ASPECTS	
What social and economic effects can be attributed to the project and which would not have occurred in a comparable situation without that project? Indicate the communities and the number of people that will benefit from this project. <i>About ¼ page</i>	For the whole country: reduction of importation charge for fossil fuel. For the target area: New generation of socio-cultural activities because of the electricity provided by the micro-turbine plant. For the local population: new revenues from the seeds sale and other derivate products like soap, fertilizer (cake waste of jatropha).
What are the possible direct effects (e.g. employment creation, provision of capital required, foreign exchange effects)? <i>About ¼ page</i>	The project will create more jobs in the field of transformation and agriculture. Other activities linked to electricity can be created and give a new revenue to the population.
What are the possible other effects (e.g. training/education associated with the introduction of new processes, technologies and products and/or the effects of a project on other industries)? <i>About ¼ page</i>	The peasants will have access to training in Jatropha plantation and plant oil and derivate product transformation technologies.
ENVIRONMENTAL STRATEGY/ PRIORITIES OF THE HOST COUNTRY A brief description of the	The National Environmental Plan (PAE) adopted in 1999 proposes to produce electricity using the new clean technologies and to reduce consumption of fossil fuel. The plant oil which can be used for cooking so that it reduces the pressure on the trees and facilitate the watershed

project's consistency with the environmental strategy and priorities of the Host Country <i>About ¼ page</i>	protection. The National Energy Sector Development Plan has also included biodiesel in the frame of its energy substitution program
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