

2019

Project Implementation Review (PIR)

**Benin Biomass Electricity Generation**

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# Basic Data

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| **Project Information** | |
| UNDP PIMS ID | 5115 |
| GEF ID | 5752 |
| Title | Promotion of sustainable biomass based electricity generation in Benin |
| Country(ies) | Benin, Benin |
| UNDP-GEF Technical Team | Energy, Infrastructure, Transport and Technology |
| Project Implementing Partner | Government |
| Joint Agencies | *(not set or not applicable)* |
| Project Type | Full Size |

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| **Project Description** |
| The objective of this project is to promote electricity generation through gasification of waste agricultural residues (biomass) to supply both the main grid and isolated mini-grids. It will also promote an integrated approach towards fostering sustainable land management that balances environmental management with energy and development needs. It will do so by leveraging significant private sector investment over its five-year implementation period to initially pilot 4 biomass gasifier installations having a total installed capacity of 4 MW. Over the project period, the 4 pilots scheduled for implementation will generate a total of 76,651 MWh of electricity. Moving forward, these 4 pilots will have an annual generation of 24,498 MWh that would be sustained over an expected 15-year projected life of the gasifiers, resulting in the cumulative avoidance of 329,981 tCO2. When activities related to sustainable forest and land management are factored in, a total of 1,094,253 tCO2 will be avoided over the 15-year gasifier lifetime, translating into a unit abatement cost of $ 3.50 of GEF funds per tCO2 reduced. |

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| Project Implementing Partner | Mr. Amine Bitayo KAFFO (masterkaffo@yahoo.fr) |
| Other Partners | *(not set or not applicable)* |

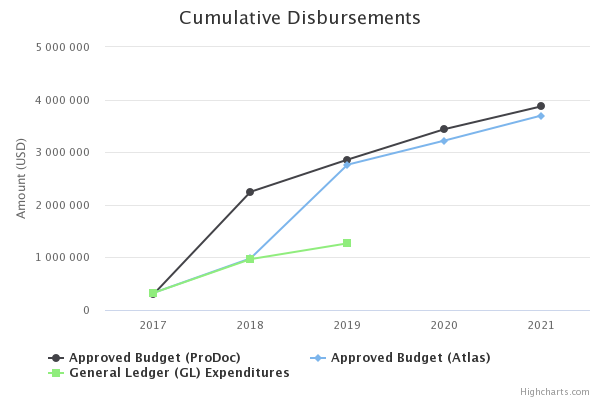
# Overall Ratings

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| Overall DO Rating | Satisfactory |
| Overall IP Rating | Satisfactory |
| Overall Risk Rating | Low |

# Development Progress

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| **Description** | | | | | | |
| **Objective**  **Introduire une approche fondée sur l'intégration des écosystèmes d'énergie à la production de biomasse-électricité durable dans le pays.** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| Réduction des émissions au cours des 15 ans de durée de vie des gazéificateurs à biomasse. | les émissions de GES dans le secteur de la production d'électricité ont augmentés de 48 millions de tonnes en 1995 à 63 millions de tonnes en 2000 et les émissions ont été estimées à 110 millions de tonnes en 2014. La présente contribution de la biomasse dans le mix de production d'électricité du pays est négligeable. Aucun investissement n'a lieu concernant la production d'électricité issue de la biomasse sur le réseau principale ou hors-réseau. | *(not set or not applicable)* | La production biomasse de 76.651 MWh de biomasse-électricité d'ici la fin du projet. Réduction directe de 67,070 tonnes de CO2 sur le cycle de vie du projet FSP de 5 ans. Génération subséquente de 24.498 MWh / an et réduction de 340,399 tonnes de CO2 sur 15 ans. Réduction indirecte des émissions cumulée de GES de près de 1,3 millions de tonnes de CO2 d'ici à 2035. | Out of the 100 ha of land planned for reforestation, with a view to induce an estimated sequestration potential of 242.3 tCO2, 200 ha of land (comprising 125 ha of private land and 75 ha of forest land ) were reforested with a sequestration potential of 484.57tCO2. These results do not include sequestrations expected to set up power plants.  The implementation of policy, legislative and institutional framework to encourage private investment for biomass gasification is dependent on many tools. Thus, the tools are the one-stop shop ( guichet unique) ; power stations parameters; the criteria definition ; lines and methodology for power plants assessment ; update of network parameters; and among others, t establishment of transparent supply markets for electricity and biomass.  [Studies from reports and workshops]  A simple assessment mechanism of sequestered CO2 has been elaborated on a spreadsheet. This will enable to follow sequestrated rate. Due to this simplified mechanism, communities stakeholders and National Energy Directorate (DGE) can follow CO2 sequestrated rate increase or reduction within the energy sector.  [Evidence: Fiche descriptive du mécanisme d’évaluation des CO2 séquestré]  Overall, these tools have been elaborated and will be implemented. Therefore, discussions with bankers, insurance and guaranties companies are ongoing (BCEAO, FAGACE, FONAGA, AIB/Bénin, AISER, SBEE; CEB … etc.).  [Studies from reports and workshops] | - 200 additional hectares of private land mobilized and reforested as part of the 2018 campaign: 50 hectares in the commune of Djougou, 30 hectares on the Djéou site and 20 hectares in the Koha forest, 100 hectares in the commune of Kalalé, Kalalé Development Unit (Nassiconzi site) and 50 hectares in the commune of Savalou (25 hectares at the Gobada site (Agonkanmé) and 25 hectares in Govi).    These 200 hectares have caused a potential theoretical sequestration of 484.57 tons of carbon based on the simple evaluation mechanism for sequestered carbon implemented at the project level.    - In addition to the 200 hectares that were reforested and recorded in the 2018 PIR report, we could say that the 400 hectares of actual reforestation for the 2017 and 2018 campaigns caused a potential sequestration of about 900 tons of carbon.  These results do not include sequestration expected from the installation and operation of plants that are currently pending.    [Evidence: Mission report on reforestation monitoring]    Currently, an Evaluation of the carbon supply in biomass, in terms of co-benefit and impact on the soil of young plantations setup in the communes of Savalou, Djougou and Kalalé was launched and is being carried out by the Biomathematics and Forestry Estimation Laboratory (LABEF, French acronym).    In addition, various tools (Policy, Strategy, Plan, Texts, Decrees, Laws, Topical Reports and other reference documents, etc.) stemming from the implementation of political, legislative and institutional frameworks that are favorable to private investment in gasification are validated, available and registered at the National Library of Benin. Including:  (i) Creation of a development policy for electricity production using biomass gasification accompanied by a regulatory/legal framework favorable to investments in the private sector;  (ii) Evaluation of the implementation of a one-stop shop for independent electricity producers using Renewable Energy in Benin;  (iii) Creation of procedures and rules for implementation of markets for supplying biomass following the appropriate standards in Benin;  (iv) Creation of criteria and definition of guidelines and methodology for environmental, economic and financial evaluation of biomass gasification plant projects;  (v) Definition of the framework for involvement and collaboration of potential investors for the production of electricity from biomass gasification plants in Benin;  (vi) Creation of rules, methods and procedures for implementation of a transparent supply process for biomass electricity from independent electricity producers (PIE, French acronym) following the appropriate standards in Benin;  (vii) Creation of document governing the implementation and operation of the Financial Support Mechanism (MSF, French acronym) and the Local Biomass Enhancing Fund (LOBEF) in Benin;  (viii) Specific study on inequality of access and conflicts of interest related to land and forest management in the communes involved in the project (Kalalé, Djougou, Savalou, Dassa-Zoumé);  (ix) Implementation of a georeference database including land use surveillance, productivity of farming and biomass availability (http://statsenergiebenin.org/#/login);  (x) Evaluation of the impact of using agricultural residue as raw materials in gasification plants and its impact on agricultural production in the communes of Dassa-Zoumé, Savalou, Djougou and Kalalé; and  (xi) Development of Integrated Land Use Management Plans (PGIUS, French acronym) in the communes of Kalalé, Djougou, Savalou and Dassa-Zoumè.    All of these tools validated by different actors and stakeholders in the project are being implemented and the results will be recorded in the next PIR.  Advocates are in place at government authorities for:  (i) adoption of development policy for biomass gasification electricity production along with a regulatory/legal framework favorable to investments from the private sector in the context of creating a unique national policy on Renewable Energy in Benin;  (ii) implementation of an operational one-stop shop at APIEx for independent electricity producers using renewable energy in Benin; and  (iii) implementation and operation of the Financial Support Mechanism (MSF, French acronym) and the Local Biomass Enhancing Fund (LOBEF) in Benin;  It should be mentioned that the discussions are in process with government authorities, various actors and ministries involved (ME, MEF, MPD, MAEP, etc.), the PIEs, private sector actors (bankers, insurance and guarantee companies (BCEAO, FAGACE, FONAGA, AIB/Benin, AISER, SBEE, CEB, etc.) for operation and effective implementation of its tools.  [Reports/deliverables for studies and workshops, reports on advocacy sessions, informational notes, ministerial council communications, drafts of decrees and edicts, workshop reports, etc.] |
| Adoption de Plans Intégrés de Gestion de l’Utilisation des Sols (PIGUS) | Aucun PIGUS n’a encore été développpé au niveau communal au Bénin | *(not set or not applicable)* | Au moins 4 PIGUS pour des sites de projets ont été développés et adoptés par les communes, et sont en cours d’application (mise en place) | PIGUS within the four (04) intervention areas have been developed and their validation through a workshop are under preparation:  (I) The planning of discussion with DGEFC and INRAB  (II) Development methodology approval of PGIUS using the WOCAT tool  (III) Local repertoire of forest and soil management ( GDTA)  (IV) Integrated management practices assessment of soil use within the four (04) intervention areas  (V) Validation workshop on communal level PGIUS  The workshop validation are planned on 15 th of july 2018.  From draft report validation, the project management Unit will put into application recommended techniques for soil, wildfires and sustainable agricultural land management techniques. The selected farmers to be accompanied through forest and soil management (GDTA) will be achieved by the next agricultural season ( 2018-2019) . [Rapports de l'étude sur l'élaboration du PGIUS, d’ateliers de Validation des Études Thématiques]. | During the period under review, significant progress was seen towards achieving this metric.    The Integrated Land Use Management Plans (PGIUS) created for each of the four (4) communes (Dassa-Zoumé, Savalou, Kalalé and Djougou) are validated and adopted by the actors at various levels and are available.  To date, the four (4) PGIUSs have been adopted at the communal level by the actors from communal and prefect structures and at the central level.  This metric reached the required target.    However, the implementation process is in progress through:    - selection of farmers to assist under the GDTA in the context of implementation of the Integrated Land Use Management Plans (PGIUS) for each of the four (4) communes (Dassa-Zoumé, Savalou, Kalalé and Djougou).  - discussions with Territorial Agencies for Agricultural Development for Sections 2 and 4 on the operationalization of results from the Integrated Land Use Management Plans (PGIUS) and the development of best practices for sustainable management of agricultural and forest lands (GDTA/GDTF, French acronym) in communes involved in the project, etc.    From these discussions, the activities to be implemented by the ATDA for 2019-2020 were defined and a partnership agreement protocol is being signed by the general directorates of the ATDA 2 and 4 and the national directorate for the project. The activities are slated to start during the month of July 2019.  Furthermore, one (1) tool/document regarding management of unequal access and conflicts of interest related to land and forest management in the communes involved in the project (Kalalé, Djougou, Savalou, Dassa-Zoumé) has been created and validated by the actors and recorded in the national library for supporting the framework for available management tools.    [EVIDENCE: Study reports on creation of PGIUS, management of inequality of land access, reports on workshops for validation of topical studies, TDR development of PGIUS implementation activities, draft of collaboration protocol projects.] |
| Réduction des Emissions grâce à la GSTF | Une perte d’environ 2758 tCO2 par an dans les 3000ha de forêts des sites de projet | *(not set or not applicable)* | Réduction directe de 659 030 tCO2 grâce à la mise en place des activités de GSTF | 75 ha of the natural reserve / classified forest land within the Trois rivieres have been reforested with timber species such as Gmelinas arborea, Cacia Siamea, Acacia auriculoformis and Tectona grandis. The sequestatred volume of CO2 amounts to 181.72 tCO2.  The 3.000 farmers who were illegally occupying 30. 000 ha of land within the natural reserve: Trois Rivieres forest have voluntary withdrawn from this classified reserve / forest.  The result has been obtained due to: (I) communal authorities’ support of kalalé municipality of forestry deconcentrated services ; communal organization of reserve management (II) and various organized awareness-raising session by the project.  [Rapports de mission de terrain et Rapport de la campagne de reboisement]. | In achieving this metric, cumulative progress as of June 30, 2019 is as follows:  (i) update of the reforestation methodology as part of the 2018 campaign with the involvement of the private sector based on the service paid based on the result;  (ii) continuing awareness sessions on the protection of the classified Trois Rivières Forest in Kalalé because of its exposure to exploitation of its land by producers looking for farmable land and pastures;  (iii) effective reforestation of 120 hectares as part of the 2018 campaign including 100 hectares in the Kalalé Development Unit (Nassiconzi site) in the Trois Rivières Forest in Kalalé and 20 hectares in the Koha Forest (Djougou) with forest species including Gmelinas, Cacia Siamea, Acacia auriculoformis and Tectona grandis;  (iv) Maintenance and refilling of 75 hectares of plantation as part of the 2017 campaign.  These 195 hectares represent over time about 472.4 tons of potentially sequestered carbon . |
| Nombre d’hectares sous pratiques de GSTF | Pas de reforestation massive dans les 4 communes.  Pas de techniques de restauration des sols mise en place sur les 4 sites pilotes | *(not set or not applicable)* | Au moins 9000 hectares sont sous pratiques de GADT | 100 ha of land on which sustainable land and soil management (GADT) have been planned , identified while awaiting their validation and PGUS implementation.  Activities on Sustainable agricultural land and soil management are defined within the four (04) intervention areas.  [Evidence : Draft-1\_Rapport\_PGIUS\_Biomasse Électricité Etat des lieux\_30-06-18, Rapports missions de prospection sur les Sites du projet] | In achieving this metric, progress recorded during the period under review is as follows:  - Creation and adoption at the communal level of Integrated Land Use Management Plans (PGIUS) in the four (4) pilot communes aiming to improve sustainable use of land including community management based on sustainable natural resources, agricultural production, breeding, ecotourism and renewable energy production.  In terms of this study, 7,100 actors were identified (4,300 in Kalalé, 1,100 in Djougou, 600 in Savalou and 1,100 in Dassa-Zoumè) from the agricultural world (farmers, breeders and others) who will be supported on 8,500 hectares of land in the four communities involved.  - Process for GDTA and GDTF implementation in progress through:  (i) Selection of farmers to receive GDTA & GDTF assistance in each of the four (4) communes (Dassa-Zoumé, Savalou, Kalalé and Djougou) and  (ii) discussions with Territorial Agencies for Agricultural Development for Sections 2 and 4 and DGEFC decentralized technical services on operationalization of the Integrated Land Use Management Plans (PGIUS) and the development of best practices for sustainable management of agricultural and forest lands (GDTA/GDTF) in communes involved in the project;  - Effective reforestation of 120 hectares of fields as part of the 2018 campaign, including 100 hectares in the Kalalé Development Unit (Nassiconzi site in the Trois Rivières Forest in Kalalé, and 20 hectares in the Koha forest (Djougou).    [EVIDENCE: Study report, PGIUS\_Biomasse Électricité, Prospecting reports on the project sites, Mission Report, etc.] |
| Plus de 5000 ménages et petites entreprises industrielles ou commerciales rurales sont connectées aux services d’électricté d’ici la fin du projet.    500 emplois sont créés au niveau du sous-secteur des gazéificateurs/ GSF/ LD | *(not set or not applicable)* | *(not set or not applicable)* | Au moins 200 emplois sont créés pour l’installation, le fonctionnement et la maintenance des gazéificateurs de biomasse ; et 300 emplois permanents sont également créés pour d’autres activités annexes. | More than nine hundred and thirty four (934 )seasonal jobs have been created (including two hundred and fourteen (214) jobs to the advantage of women) for reforestation implementation activities which will contribute to production inputs for Biomass plants use.  The situational analysis of electricity has been done within the four (04) intervention areas. Hence, this determined the electricity demand and numbers of households which could benefit from electricity, once it will be produced.  This situational analysis demonstrates that there has been a high electricity demand within all intervention areas. The injection into the network and isolated off-grids of electricity produced through gasification will increase connection rate.  [Evidence: Rapport sur le Genre, Rapport de la Campagne de Reboisement 2017, Situation du Référence de l'état du Réseau, Rapports Mission de Prospection sur les sites de BIomasse, Rapports CTP] | This metric cannot be provided yet since the plants have not been setup.    However, the project created 2,026 seasonal jobs of which 523 are held by women (26%) for implementation of reforestation activities that should serve as fuel for the operations of four gasification plants and reforestation as part of the 2018 campaign.  Many of these plantations will provide alternative inputs for operation of the gasification plants for electricity production.  The Resources injected into the local economy reach 439,820.3564 USD of which 105,556.8855 USD benefit women (24%).    In the context of project implementation, it is anticipated that at least 200 jobs will be created for installation, operations and maintenance of the biomass gasification plants and 300 permanent jobs for other connected activities related to supply and other connected services.  At this time, we can confirm that if the trends continue that goal of 300 jobs will be easily passed once the plants are operational.    [EVIDENCE: Mission reports on reforestation monitoring, Reports on providers in charge of plantation maintenance, Report on gender consideration in the implementation of the project in 2018: Baseline position of the network, Prospecting mission reports on biomass sites, CTP reports] |
| **The progress of the objective can be described as:** | | **On track** | | | | |
| **Outcome 1**  **Produit 1: Une politique de marché rationalisée et globale, dans un cadre juridique/réglementaire destinée à production de la biomasse-électricité par les producteurs d'électricité indépendants.** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| Existence d'un cadre politique et réglementaire adéquat | Non disponible à ce moment | *(not set or not applicable)* | Terminé dans les 12 mois suivant le début du projet et approuvé par le gouvernement au début de l'année 2. | The target has not been reached yet. It has been noted that within project implementation the deadline to meet targets has been under –evaluated.  However, significant progress towards reach of objectives have been registered through specific elements.  These are:  (I) Rapport sur les caractéristiques du réseau dans les communes d’intervention du projet pour leur raccordement au réseau/mini-réseau ;  - (II) Rapport relatif à l’étude sur la définition du cadre d'intervention et de collaboration des potentiels investisseurs pour la production d'électricité à base de centrales à gazéification de Biomasse au Bénin est validé et disponible  - Rapport relatif à l’étude sur l’élaboration des procédures et règlements de mise en place des marchés d'approvisionnement de la Biomasse suivant les normes et standards appropriés au Bénin est validé et disponible  - Rapport relatif à l’étude à l’élaboration des procédures et règlements de mise en place d'un processus d'approvisionnement transparent en électricité issu de la Biomasse par les Producteurs Indépendants d’Energie (PIE) suivant les normes et standards appropriés est validé et disponible ;  - Rapport relatif à l’étude de faisabilité (analyse institutionnelle et organisationnelle) de la mise en place d'un guichet unique pour les producteurs indépendants d’électricité à base des énergies renouvelables au Bénin ;  - Rapport relatif à l’étude de définition des lignes directrices et de la méthodologie pour l'évaluation environnementale, économique et financière des projets de centrales à gazéification de Biomasse ;  - Draft du Rapport d’étude sur le cadre politique, légal et institutionnel ;  Draft du Rapport relatif Définition des paramètres techniques des centrales à gazéification de Biomasse est validé ;  From Biomass Electricity starting date (February 2017), there were none specific provision within the renewable energy and gasification development.  Also, the institutional and regulatory framework of the energy sector went through continuous improvement through :  - Renewable energy draft project implementation;  - Implementation of [Plan Directeur de l’électricité (PDE)] ( in Benin, 2017)  - Political Off-grid rural electrification implementation  The one-stop shop (Etude sur les guichets) study demonstrated that Private Investors await for five (05) years( time limit) before obtaining projects’ Licenses. However, the one-stop shop once implementated will aim to reduce the time limit to a fifty (50) days. Therefore, the one-stop shop will contribute to improve national institutional framework.  Also, It has been acknowledged by the sectors ‘ actors that the one- stop shop is integrated into an existing one- stop shop called ( The Investment and Exportation Promotion Agency (APIEx)) part of the Ministry Commerce. Biomass Electricity started discussions with GUFE management in order to define the conditions for the one- stop shop implementation once it will be implemented. The discussion for operationalization will start from second semester (2018) .    Whereas, the technical report on grid capacity requirements to enable feed-in for grid-connected renewable energy has not yet be completed.  Thus, the report should encompass, three (03) main elements: (i) the network status (frequency, voltage and electric degrees)), (ii) network upgrade (iii) biomass gasification criteria per intervention area. A draft report on Biomass plant criteria exists, and situation of reference have been done during prospecting field trips (of the intervention area).  (Rapport d'Etude sur la faisabilté du guichet unique).  [Other Evidence: DOCUMENT DE BASE\_Révision Code Electricté\_draft, Rapport\_SIE\_2015\_20\_06\_2017-SK-CS-V6, 2016-08-Doc Synthèse Plan Dir Sect Elect (VFP), DOCUMENT DE BASE\_Révision Code Electricté\_draft, AVANT PROJET DE LOI SUR LES ENERGIES RENOUVELABLES, Plan développement Électricité Hors réseau, AXES D'AMELIORATION DE LA REGULATION DANS LES CODES ELECTRICITE DU BENIN, Avis-d-information-Contrat-de-Gestion-SBEE, Rapport\_Analyse\_sous-secteur\_Electricité, 2008\_Etude faisabilite\_gazification\_-au Bénin\_uemoa, ] | The implementation of an adequate political and regulatory framework requires the creation, validation and adoption of several management tools for the biomass electricity sub-sector. Including these tools:  - policy document for biomass gasification electricity production development along with a regulatory/legal framework favorable to investments from the private sector were created, validated and recorded at the National Library of Benin.  - ministerial council communications plan for adoption of the policy and decrees for policy implementation were created.  All of these tools were transmitted to the Presidential Unit for Development of Renewable Energy (UC-PDER, French acronym) for consideration of the results of creating the single National Policy on Renewable Energy in Benin (PONADER, French acronym), which was recently validated. In effect, following the creation of these tools, the government of Benin decided to give the whole renewable energy sector a single policy to promote new and renewable energy, including other sub-sectors in addition to gasification. (Decision resulting from new government reforms.)  This metric will be achieved once the government adopts the new single policy (PONADER).    Other documents were also created, validated and recorded in the National Library of Benin. Including:  - the Report on rules, methods and procedures for implementation of a transparent supply process for electricity coming from biomass from independent electricity producers (PIE, French acronym) following the appropriate standards in Benin is validated, available and recorded in the National Library of Benin;  - Report on the feasibility study (institutional and organizational analysis) of implementation of a one-stop shop for independent electricity producers using renewable energy in Benin is validated, available and recorded in the National Library of Benin;  Furthermore, other topical document/reports are being created/finalized. Including:  - the updated network code; the update process for this document is already being carried out by the Millennium Challenge Account Program - Benin II, leader of PTFs for the energy sector.  However, the Biomass Electricity Project makes technical expertise available to MCA II consultants so that the biomass electricity section will be taken into account,  - the provisional report on the technical parameters for each type of electricity production plant using biomass gasification is available.    EVIDENCE : [Report on proposed policies and legal tools, Reports on topical studies] |
| **The progress of the objective can be described as:** | | **On track** | | | | |
| **Outcome 2**  **Produit 2: Augmenter les investissements dans les technologies d'énergie propre et dans les pratiques faibles en carbone du secteur des déchets d’agroforesterie.** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| L'investissement dans les gazogènes de biomasse (en $) | Aucun document complet disponible à l'heure actuelle.    Très peu d'investissement ont lieu à l'heure actuelle. | *(not set or not applicable)* | Terminé dans les 12 mois suivant le début du projet et appliqué par le gouvernement par la suite. 15 millions $ investis dans des projets d'Energie Propre d'ici la fin du projet. | The target has not yet been reached. During the project implementation, the deadline to reach this target has been widely under-valued.  The progres are preparatory studies such as : (i) revue documentaire sur la gazéification de la Biomasse pour la production d'électricité, (ii) répertoire des investisseurs nationaux et internationaux pertinents, (iii) analyse des expériences de la gazéification de la biomasse en Afrique et dans le Monde, (iv) Réflexions sur les possibilités de mesures incitatives au profit de la gazéification.  The preparatory studies, as mentioned above are key to climate investment improvement, remain unavailable to renewable energy sector in Benin.  Although the preparatory studies have not been scheduled in the project document, their implementation appeared as a necessary prerequisite to embark on biomass plant’ investment. Timeline for both authorizations and licenses obtention have been reduced to five (05) years due to the one- stop shop implementation, that will be operational from 2019.  The Financial Mechanism Support (FSM) process and LOBEF have started. The results studies are due for last term of the year.  In the project document, the implementation of MSF and LOBEF is planned for year two (2), ie 2018. Nevertheless, since 2017, measures have been taken to anticipate the realization of this planned activity.  Furthermore, on December 12, 2017 a national workshop has been organized with the aim of laying foundation for the realization of this important tool.  The related study on FSM and LOBEF is entrusted to the science research ( Ecole doctorale des Sciences Economiques de l’Université du Bénin). The results are expected for the second semester (2018).  The following step will consist in defining incitatives measures (exemptions, reductions / removals of import taxes, tax benefits, etc.) for the future financial laws draft. Also, this will be dependent on proposed measures regarding the political/ regulatory framework to which results will be approved on next term .    (Evidence: rapport provisoire Elaboration d'un cadre politique favorable, aux investissements, Rapport Atelier MSF du 17 Dec 2017, rapports des ateliers de validation des études Thématiques, Memo As Sélection des IPPs, Memo As Étude faisabilité capacité technique et financière des IPP, Mémo Installation Lampadaire PV) | Construction of plants by IPPs need prior conditions (adequate political and regulatory context). This justifies carrying out certain topical studies, of which certain reports/deliverables are validated, available and recorded at the National Library of Benin. Including:  (i) Creation of the development policy for electricity production using biomass gasification accompanied by a regulatory/legal framework favorable to investments from the private sector;  (ii) Evaluation of the implementation of a one-stop shop for independent electricity producers using renewable energy in Benin;  (iii) Creation of procedures and rules for setting up markets for supplying biomass following the appropriate standards in Benin;  (iv) Creation of criteria and definition of guidelines and methodology for environmental, economic and financial evaluation of biomass gasification plant projects;  (v) Definition of the framework for involvement and collaboration of potential investors for the production of electricity from biomass gasification plants in Benin;  (vi) Creation of rules, methods and procedures for setting up a transparent supply process for electricity coming from biomass from independent electricity producers (PIE, French acronym) following the appropriate standards in Benin.    Also, following the national workshop organized in December 2017, which brought together potential investors (bank, insurance institutions, microfinance institutions, independent electricity producers, etc.), the project launched the process to implement a one-stop shop and incentives including the Financial Support Mechanism (MSF, French acronym), and the Local Biomass Enhancing Fund (LOBEF) encouraging development of the gasification market in Benin; To do this, study reports were created, validated and recorded in the National Library of Benin.    Furthermore, other document (reports, edicts, decrees, protocols) are being finalized. Including:  - Drafts for decrees and ministerial council communications, which are available and waiting for validation.  - Interministerial decree for implementation of the temporary commission for MSF operation, which is subject to approval by the Presidential Cell for analysis of ministerial and prefect decrees. The process for signature by the Ministers of Planning, Energy and Finance is in progress.  - financial incentive measures to encourage gasification were defined in the development policy document for biomass electricity, which is validated and available. They were taken into consideration for the PONADER, which is validated.  - The Agreement Protocol (MoU) will be created after the MSF management committee is setup during the third quarter of 2019.  - Construction/installation of 4 MW biomass gasifier plants on the network or off the network require prior feasibility studies which are currently in progress and the deliverables are pending. Including:  (i) feasibility study for installation of 4 biomass gasification plants (in progress) and  (ii) study of the definition of technical parameters for biomass gasification plants to connect them to the network/mini-network in order to ensure their safety and proper operation of the system (finalization).    The next step will be to select the IPPs, which is planned for the third quarter of 2019.    [Evidence: [ME and MEF correspondence, Note on the File, Draft of Interministerial Decree, etc.] |
| **The progress of the objective can be described as:** | | **On track** | | | | |
| **Outcome 3**  **Produit 3: L'utilisation intégrée des terres, la gestion durable des forêts et la gestion des ressources naturelles offrent des avantages sociaux et permettent de maintenir la biomasse pour la production d'électricité.** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| a. Stock de carbone renforcée dans les forêts.  b. Nombre d'hectares sous pratiques de GADT  c. Séquestration du CO2 avec la plantation d'arbres. | Une perte d'env. 2,758 tCO2 chaque année dans les 3000 ha de forêt des les sites du projet. Pas de reboisement à grande échelle dans les quatre communes. Aucune technique de restauration des terres mises en œuvre dans les quatre sites pilotes. | *(not set or not applicable)* | a. Au moins une amélioration de 72.000 tCO2 pendant la durée de vie de 20 ans.  b. Au moins 9.000 ha sont sous pratiques de GADT.  c. Au moins 587,030 tCO2 séquestrés sur 20 ans. | a.181,72 carbon alternatives have been sequestred through 75 ha land forestry.  b. et C. … land ha through which sustainable and land management (SALM) have been identified while expecting the PIGUS validation and adoption  Outcome three (03) focuses on Sustainable Management of Forests and Natural Resources.  Four (04) major actions were planned such as (i), the development of Integrated Land and Use Management Plans (PIGIUS) within the four intervention areas, (ii) the implementation of fire management practice on 3000ha (classified forest), (iii) the implementation of 2000 ha plantations on private land (iv) the introduction of newly agricultural methods and techniques for land sustainable management (GDTA) on 9,000 ha of land.  Intensive reforestation has been achieved in 2017 by the project within two( 02) localities (Djougou and de Kalalé) out of the four (04) intervention areas.  Those reforestation have been undertaken on 200 land ha. Also, they enabled the sequestration of 484, 57t CO2.  75 ha have been reforested within the Trois Rivières forest (Kalalé) which will strengthen forests’ carbon stock.    None surface is under practice of sustainable, agricultural and land management yet. Indeed this activity is dependent on PIGIUS implementation whereby technical points are awaiting for validation at municipal level.    However, the farmers selected for skills enhancement will take place before the next agricultural season (2018-2019). Furthermore, contacts have been taken with Benin National Institute of agronomical Research (INRAB) ) in order to work in synergy for the planning of activities within intervention areas.  A simple assessment mechanism of sequestred CO2 as a spreadsheet has been implemented by the project management unit which enable to follow sequestration rate progress.  Due to this simplified mechanism, community actors and National Energy Directorate (DGE) will themselves follow sequestered or reduced CO2 within the energy sector. | (i) Update of the reforestation methodology as part of the 2018 campaign with the involvement of the private sector based on the service paid based on the result;    (ii) Reforestation of 120 hectares as part of the 2018 campaign (20 hectares in the Koha forest (Djougou) and 100 hectares in the Kalalé Development Unit (Nassiconzi site) in Kalalé.    These 120 hectares have caused a potential sequestration of 290 tCO2 based on the simple mechanism for evaluating sequestered carbon implemented at the project level.  In addition to the 75 hectares that were reforested and recorded in the 2018 PIR report, we could say that the 195 hectares of actual reforestation for the 2017 and 2018 campaigns caused a potential sequestration of 472 tCO2.    These results do not include sequestration expected from the installation and operation of plants that are currently pending.    a) In terms of the first metric (an improvement of at least 72,000 tCO2 over the 20-year life span), the application of GADT practices on more than 9,000 hectares is planned in the PGIUS, which will be implemented in partnership with INRAB and the ATDAs.  b) In terms of the second metric (at least 9,000 hectares using GADT practices), the Integrated Land Use Management Plans (PGIUS) created for each of the four (4) communes (Dassa-Zoumé, Savalou, Kalalé and Djougou) have been created, validated and adopted by the actors at various levels and are available. In terms of this study, 8,500 hectares were identified in four communes benefiting 7,100 actors (4,300 in Kalalé, 1,100 in Djougou, 600 in Savalou and 1,100 in Dassa-Zoumè) from the agricultural world (farmers, breeders and others).    Finally, for the third metric (at least 587,030 tCO2 sequestered over 20 years) the volume of carbon sequestered by the 400 hectares of plantations installed in 2017 and 2018 (205 hectares of private land and 195 hectares on forest land) reached at least 969.14 tCO2.    Also, two (2) other tools are validated, available and recorded in the National Library of Benin to reinforce the management toolbox available to achieve these metrics. Including:  (i) Report on management of inequality of access and conflicts of interest related to land and forest management in the communes involved in the project (Kalalé, Djougou, Savalou, Dassa-Zoumé);  (ii) Report regarding the implementation of a georeference database including land use surveillance, productivity of farming and biomass availability; The database is setup at the project level and at the DGRE. |
| **The progress of the objective can be described as:** | | **On track** | | | | |
| **Outcome 4**  **Produit 4: Programme de sensibilisation et de diffusion de l'expérience/ meilleures pratiques/ leçons apprises lors de ce projet, pour sa réplication dans tout le pays.** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| Sensibilisation aux gazogènes de biomasse et à leurs leurs possibilités. | Le manque d'informations suffisantes pour poursuivre le programme. | *(not set or not applicable)* | Sensibilisation accrue chez certains 30 intervenants en place pour surveiller, promouvoir et développer le marché de la production d'électricité à base de biomasse. | BIOMASS Electricity organised and participated in various meetings and workshops (approximately 20).  The participants were introduced to workshops on skills building / trainings orientated towards climate changes’ issues, mitigation measures within the Energy sector such as gasification. Furthermore, Interviews and awareness sessions during field missions (about 15) were also opportunities for project’ experts to strengthen stakeholders and beneficiaries skills. These were issues encountered.  The global communication plan is elaborated and awaiting for validation.  On December the 12th 2017, Biomass Electricity organized a national workshop with potential investors, businessman/ economic operators and sectors stakeholders.  It brought attention to private investors on development opportunities of biomass plan gasification for electricity production in Benin. Fifty seven (57) participants including twelve (12) percent of women took part in it. Moreover, another seminar has been planned for the second semester (2018).  Indeed, another workshop has been scheduled for 2018.  On the other hand, for more actions’ visibility/branding, Biomass Electricity printed leaflets and factsheet in order to promote and communicate on undertaken activities, components, headlights results introduced at keys workshop, foreign field trip, and seminars.  ( Evidence: rapport de l’atelier MSF décembre 2017, Draft Plan de communication PBE ) | The Biomass Electricity Project organized and participated in 12 meetings and workshops during the period under review, a total of 32 since the beginning of the project.    Participants benefited from skills strengthening/training sessions focused on climate change problems and mitigation measures in the energy sector, such as gasification.  In addition, 14 awareness sessions were organized by the project during the field missions. These sessions allowed base communities to strengthen their skills and gave providers information on mitigating the impact of climate change.  In total two hundred sixty (260) actors (men and women) received this training.    It should be mentioned that the project has a communication plan waiting for validation. However, some IEC actions are planned for the third quarter of 2019.  (Evidence: 2018 Progress Report, Mission and Workshop Reports, Photos, Articles, Communication Plans.) |
| **The progress of the objective can be described as:** | | **On track** | | | | |

# Implementation Progress



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| Cumulative GL delivery against total approved amount (in prodoc): | 32.72% |
| Cumulative GL delivery against expected delivery as of this year: | 44.33% |
| Cumulative disbursement as of 30 June (note: amount to be updated in late August): | 1,267,142 |

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| **Key Financing Amounts** | |
| PPG Amount | 100,000 |
| GEF Grant Amount | 3,872,602 |
| Co-financing | 25,750,000 |

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| **Key Project Dates** | |
| PIF Approval Date | Apr 1, 2014 |
| CEO Endorsement Date | Jun 14, 2016 |
| Project Document Signature Date (project start date): | Jan 27, 2017 |
| Date of Inception Workshop | Nov 24, 2016 |
| Expected Date of Mid-term Review | Dec 31, 2019 |
| Actual Date of Mid-term Review | *(not set or not applicable)* |
| Expected Date of Terminal Evaluation | Jan 27, 2022 |
| Original Planned Closing Date | Jan 31, 2022 |
| Revised Planned Closing Date | *(not set or not applicable)* |

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| **Dates of Project Steering Committee/Board Meetings during reporting period (30 June 2018 to 1 July 2019)** |
| 2018-07-18 |
| 2018-10-25 |
| 2019-01-29 |
| 2019-04-23 |

# Critical Risk Management

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| --- | --- |
| Current Types of Critical Risks | Critical risk management measures undertaken this reporting period |

# Adjustments

**Comments on delays in key project milestones**

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| **Project Manager: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.** |
| The Biomass Electricity Project has led the institutional implementation of the Financial Support Mechanism (MSF, French acronym) in Benin. This tool is an innovation in the energy sector. It meets an important need: that of providing a guarantee that the private actors interested in investing in the development of biomass electricity will be paid for the electricity provided as part of the electricity sale-purchase contracts connected to the network (on-grid, off-grid, etc.) With the start of the project this facet was an obstacle for effective involvement of the private sector. This tool should be implemented according to the project document. However, the national context and expectations of actors have pushed the dates back.    The MSF administrative documents that need approval from the Government of Benin are being signed by the various ministerial authorities involved. Signature of the documents will establish the setup of the MSF management committee. [Evidence: signed letters and drafts of interministerial edicts, communications and decrees]  The Biomass Electricity Project will receive its independent mid-project evaluation at the mid-point of project implementation. For this purpose, the TDRs are already created and the regional office has issued its opinion. The recruitment process for the experts who will carry out the mid-project evaluation process will be launched soon. [Evidence: Mid-project TDR evaluation] |

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| **Country Office: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.** |
| The various documents for mid-project independent evaluation of the implementation of the Biomass Electricity Project have been created. This evaluation will take place in July 2019. The mid-project evaluation process is currently in progress. There has been no delay in the mid-project evaluation for this project and so the report is expected to be submitted in December 2019. |

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| **UNDP-GEF Technical Adviser: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.** |
| Not Applicable |

# Ratings and Overall Assessments

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| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **Project Manager/Coordinator** | Highly Satisfactory | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | The Biomass Electricity Project is dedicated to promoting energy generation using gasification of agricultural residue and waste (biomass) in order to supply the primary network and the isolated mini-networks. It is the first time in Benin that it is planned to expand the 4 MEGAWATT energy mix based on biomass gasification; consequently, it is an innovative project with various co-benefits. It is justified by the introduction of several strategic tools that meet the needs expressed in the sector; for example, the operation of a one-stop shop, operation of the Financial Support Mechanism (MSF), etc.  The government bodies for decisions and monitoring/evaluation of the Biomass Electricity Project are operational and they provide their guidance in a timely manner in accordance with the general and sectoral strategy policy documents established by the Government of Benin.  The Biomass Electricity Project is a pilot project for the Government Action Program (PAG 2016-2021.) All of the national and regional actors (West African Power Pool) recognize it as a innovative project that will launch the development of an effective market founded on the widespread use and marketing of agricultural biomass gasifiers in Benin. This project is based on four interdependent elements:  (i) the development of an appropriate institutional, legal and regulatory policy;  (ii) a business climate offering crucial incentives to promote investment in biomass electricity production of 4 MW in the national energy mix;  (iii) sustainable management of forests and land at the communal level; and  (iv) greater capacity/awareness of stakeholders and investors from the private sector in adopting agricultural biomass gasification for electricity production and to capitalize on the economic and environmental advantages it provides.  These project focuses are monitored and appropriate for the various actors.  The schedule for proper execution and contributions to renewable energy development is appreciated by the government bodies involved in the project. We note the strong involvement of various stakeholders (sectoral ministries, private sector, project management team, political/administrative authorities at various levels, beneficiary populations).    The Biomass Electricity Project is on a straight path to achieve the objectives assigned to it within the prescribed time periods.  The involvement of UNDP in the monitoring and supervision of planned adaptation actions gives an idea of the success of the project and the way it has been taken on by the National Party. The fact that it has been fully taken on at the national level is quite an accomplishment for the Biomass Electricity Project.  To encourage, facilitate and reinforce this institutional grounding and the visibility of this innovative project with various benefits, UNDP Benin handles the monitoring/evaluation, guidance and approval of work plans (quarterly, annual, biannual, etc.) in cooperation with the Ministry of Energy and the appropriate implementation departments. UNDP also supervises budget reviews, progress monitoring, identification of problems and proposed corrective actions to achieve the project goals within the prescribed time limits.  The institutional setup of the Biomass Electricity Project with the supervision of UNDP ensures proper handling of the project management team activities. Once the work plans are approved, the authorizations are systematically given to the project management team for implementation in the context of monitoring/evaluation and the capitalization.    To date, the proper handling of activities in the context of monitoring/evaluation is confirmed by physical execution rates (TEP, French acronym) and financial execution rates (TEF, French acronym). In the context of implementing the 2019 PTA, the TEPs and the TEFs reached 68.15% and 83%, respectively, as of December 31, 2018. In terms of the 2019 PTA being implemented, the TEPs and the TEFs are 44.93% and 54%, respectively, as of June 30, 2019.  These execution levels show the real effort being made on this project during the PIR period, bringing the overall TEPs and TEFs to 31.58% and financials to 31.2% since the start of the project (February 1, 2017).    While so far these levels of financial execution are below expectations, with the coming payment of the initial 1.5 million dollars from the MSF, which will happen before the mid-project review, the project will reach an overall TEF of 65.5%, which will allow the goals to be reached and greatly surpassed. This shows that the project is on the right course.    All aspects of the project's performance have been corroborated by the 2018 HACT audit for the project, planned by UNDP and executed in February 2019. In effect, this audit addressed: (i) all of the expenses (quarterly financial reports) initiated and carried out directly by the execution partner established under the name Combined Expense Reports (CDR) as of December 31, 2018, (ii) the treasury status (bank balances) at the close of the 2018 fiscal year, (iii) status of assets and equipment owned by the project as of December 31, 2018. In terms of this independent control based on a methodological approach in accordance with international standards on auditing (ISA) and international standards for related services (ISRS) 4400, the opinions express by the evaluating office are all favorable. | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **UNDP Country Office Programme Officer** | Highly Satisfactory | Highly Satisfactory |
| Overall Assessment | In accordance with the Government Action Program of Benin (2016-2021), the UNDP Strategic Plan, the energy strategy documents, the 2030 sustainable development program, UNDP supports the implementation of the Biomass Electricity Project with principles of universality, gender and equality, as well as the principle of inclusivity to not leave anyone behind.    After the start of the project (February 1, 2017), implementation was carried out according to the Project Document. The project management team created and validated various tools (Policy, Strategy, Plan, Texts, Decrees, Laws, Topical Reports and other reference documents, etc.) stemming from the implementation of political, legislative and institutional frameworks that are favorable to private investment in gasification.    Also, the Financial Support Mechanism (MSF), a new tool in the energy sector was established by the interministerial decree which is in the process of being signed. This tool will be effective until the end of 2019.    The supervision from UNDP through the project addressed several combined challenges of the agro-forestry and energy sector including:  - ineffective planning and monitoring of land use at the communal level;  - weak support for implementation of the political and legal context necessary to achieve sustainable land management;  - poverty, rural exodus, energy insecurity and its corollaries;  - lack of innovation and investment alternatives (private sector and public finance) in biomass electricity  - illegal and anarchic exploitation of forest resources (for example, rudimentary production of charcoal from classified forests, or extension of agricultural plots into the forest);  - poor development of alternative options for revenue-generating activities;  - poor national and rural electrification rates.    During the period addressed by the 2019 PIR (July 1, 2018 to June 30, 2019), UNDP guided the project with an intelligent approach to provide sustainable solutions to combined challenges. These challenges include reforestation with the technical cooperation of the forestry administration in classified forests and on private land/fields, securing and maintaining them in the communes involved in the Biomass Electricity Project. The primary outcome of this multi-actor process is:    - 400 hectares effectively reforested with tree species (Gmelina arborea, Acacia auriculiformis, Cassia Senna siamea, Eucalyptus camaldulensis, Calceidra, Teck) were planted in three (3) of the four (4) communes involved. These plantations will serve as: (i) raw material with high calorific value (HC) intended for biomass gasification plants generating 4 MW on the four pilot sites selected in the ProDoc; (ii) raw material to produce long-term sustainable wood and improve local community revenue; (iii) plantations dedicated to sustainable agricultural and forestry practices offering greater availability of agricultural waste to be used in the gasification plants. These 400 hectares of effective reforestation as part of the 2017 and 2018 campaigns led to a potential sequestration of about 900 tons of carbon. These results do not include sequestration expected from the installation and operation of plants that are currently pending.    - Thirteen (13) topical studies that have been approved and validated on the promotion of biomass electricity in Benin whose reports are recorded in the National Library of Benin.    These pilot results were obtained through the involvement of all of the stakeholders and the strategic leadership of UNDP. The involvement and support of UNDP in the Biomass Electricity Project also addressed:  - project risk management, anticipation and project risk monitoring measures;  - monitoring of institutional grounding, including involvement of national authorities (leadership of the national party, Ministry of Energy, Ministry of Quality of Life and Sustainable Development, Ministry of Planning and Development, Presidency of the Republic, Electricity Regulation Authority, etc., and their directorates/appropriate departments), prefect and local authorities in the implementation of the project;  - effective involvement of the private sector in all steps of activities related to project management and in the context of national ownership.  - use of local workforce on project sites, specifically women (2,026, including 523 women, 26%) in accordance with the UNDP and Ministry of Energy's gender strategy; and  - development of scientific research and technological innovation in the implementation of the project.    Roles and support of UNDP in the implementation of the Biomass Electricity Project contribute to the results achieved for the Government Action Program (PAG 2016-2021), United Nations Development Assistance Framework (UNDAF 2019-2023), Sustainable Development Goals (SDG 2015-2030) and the 2063 Agenda for the Africa Union (AU), all essential for the transformational development of the population and the fight against poverty in the country.    The performance during this PIR period is evidence of the diverse responses to management implemented by UNDP to achieve development results. The Biomass Electricity Project has always provided technical documents in a timely fashion, as well as planning documents (work plans, technical reports, program reports, financial reports, etc.)    The physical execution rates (TEP, French acronym) and financial execution rates (TEF, French acronym) compared to the 2018 Annual Work Plan are 68.15% and 83%, respectively, as of December 31, 2018. As of June 30, 2019, these same rates are 41.47% and 56.96%, respectively, compared to the PTA for this same year.    These execution levels show the real effort being made on this project during this PIR period, bringing the overall TEPs and TEFs to 31.58% and financials to 31.2%. While so far these levels of financial execution are below expectations, with the coming payment of the initial 1.5 million dollars from the MSF, which will happen before the mid-project review, the project will reach an overall TEF of 65.5%, which will allow the goals to be reached and greatly surpassed. This shows that the project is on the right course. This performance will allow the project metrics to be achieved in a timely fashion.    The effort of the project management team regarding the requirement to effectively involve and represent women in the implementation of project activities and within the governing bodies is a basis for promoting gender equality. While the level of involvement is far from perfect, it is acceptable (average involvement rate of over 25%).  Also, the strategy for completion and sustainability of the project is taking shape and is today an urgent issue for the project. | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **GEF Operational Focal point** | Highly Satisfactory | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | In terms of the metrics that have been achieved, the results of the Biomass Electricity Project are very satisfying. They are compatible with the national priorities and the government action plan (PAG, French acronym) for the 2016-2021 period to the extent that they increase the rate of renewable energy in the national energy pallet. Through June 2019, the project has respected the Sustainable Development Goals (SDG), specifically SDGs 7 and 13. Biomass electricity meets FEM expectation and carbon sequestration forecasts thanks to the many fast-growing plants planted and the identification of areas to place under sustainable management of agricultural and forest land.    FEM's priority and objectives have been maintained and continued by the execution agency (General Directorate of Energy Resources). The next step will be the operationalization of the Financial Support Mechanism (MSF) and the setup of plants as a primary sequestration strategy for the 1,094,000 tons of carbon sequestered in the 15 years to come through gasification of agricultural and forestry residue and waste. | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **Project Implementing Partner** | Highly Satisfactory | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | The General Directorate of Energy Resources (DGRE, French acronym) enjoys the support of UNDP and FEM for implementation of the Biomass Electricity Project. For this project, the Directorate was able to support significant and notable improvements in the renewable energy sector, specifically in biomass gasification. Thanks to this project, the gasification sub-sector is better known and better organized through:    - creation of a gasification policy promotion document proposing incentives and exemptions necessary to promote the gasification chain;  - providing access to renewable energy sector actors (private sector, public administration, others) of methodology and guidelines for assessment and evaluation of gasification electricity production projects;  - improvement of human resource and institutional capacities to assess and evaluate gasification electricity production projects;  - setup of a database for monitoring biomass and estimation of agricultural residue available for electricity production;  - precise and concrete evaluation of impact that the use of agricultural residue for gasification electricity production has on agricultural performance;  - creation of procedures and rules for setting up markets for supplying biomass following the appropriate standards in Benin;  - definition of the framework for involvement and collaboration of potential investors for the production of electricity from biomass gasification plants in Benin;  - creation of rules, methods and standardized procedures for implementation of a transparent supply process for electricity coming from biomass from independent electricity producers (PIE, French acronym) following the appropriate standards in Benin.  - a new perspective at the rural community level, particularly farmers, on the usefulness of agricultural waste and its contribution to electricity production.  All of these elements cited above today allow Benin, as well as the Sponsors, to offer the best institutional context for biomass gasification to produce electricity.    Implementation in the coming weeks (i) of a Financial Support Mechanism (MSF, French acronym) for PIEs in case of lack of treasury for companies distributing electricity in Benin as well as (ii) operation of a one-stop shop for independent electricity producers using renewable energy in Benin will complete this important support from FEM and UNDP of the renewal energy sector. These are all aspects that are welcomed by the players in the sector, particularly the renewable energy players brought together under AISER.  Furthermore, thanks to the 400 hectares reforested in just the two years of the project, the Biomass Electricity Project has placed the Benin energy sector at the forefront of contribution to intensive reforestation efforts in the country and allows for better sequestration of carbon.    The General Directorate of Energy Resources (formerly DGE, French acronym) of the Ministry of Energy also appreciates how UNDP continued to take ownership for this project and provide its institutional financial support of the activities. It implemented the project under the NIM (National Implementation Management) approach. It also facilitates the mobilization of various actors. At the request of the administration, UNDP makes financial resources available that are used appropriately every quarter to successfully carry out planned actions and tasks. In the context of cooperation with UNDP, high-level consulting and flexibility are appreciated.    The results of the project are what my administration (DGRE) and the government of Benin have carried out.    I am very satisfied with the results and prospects for the Biomass Electricity Project. | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **Other Partners** | *(not set or not applicable)* | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | *(not set or not applicable)* | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **UNDP-GEF Technical Adviser** | Satisfactory | Satisfactory |
| Overall Assessment | The energy access challenges faced in Benin are highly significant; it has an overall electrification rate of 38.4%, but only 2.4% in rural areas. At the same time, Benin relies heavily on wood to produce heat, and the growth in demand for wood derived energy production (mostly heat for cooking purposes) is on the rise, at some 11.5M m3 in 2012, up from 7.6M in 1997. As a result of this, the 'forestry sector’, which sits beneath the Ministry of Environment, employs some 100K people to harvest and manage Benin’s forests. Currently this is not being done sustainably, and a more integrated approach has been identified as one of the ways in which to reconcile a growing demand for wood as a fuel and the catalytic effect this is having on deforestation.    This innovative project seeks to combine biomass gasification technology and integrated land management practices; this way, it addresses both energy and environmental challenges, and could significantly improve the quality of life of the Beninese in a sustainable manner.    At a high level, this project seeks to leverage funding from the private sector to capitalize four (4) gasification pilot projects, with a generation capacity of 4MWe. It plans to deliver this over a five year period, during which it will also introduce land management techniques to create a sustainable feedstock for these gasification plants. The latter is therefore a priority for completion during the first couple of years of the project’s implementation period. The gasification plants will depend on a robust regulatory framework to ensure that these pilot projects are replicable throughout the country.    The project was initiated in July 2016 but started really in February 2017 when the Inception Workshop was held. This is the second PIR report since inception. Compared to the last review period, the project did quite well. The cumulative delivery against total approved amount moved from 28% (USD 636,397) in 2018 to 44% (USD 1,267,142) in 2019. This is a good progress, almost doubling the delivery rate of 2 years within 1 year. This shows that the project is making efforts to increase delivery.    During the past 24 months, the PMU team has worked closely with government to secure land that will be utilized for gasification, but also to develop PIGUS, ‘Plans Intégrés de Gestion de l’Utilisation des Sols’ i.e. Integrated Land Management Plans. The PIGUS have now been developed for 4 intervention areas, and are to be validated through a series of workshops over the coming two to three months. This includes a number of recommended techniques to be used, including soil, wildfires and sustainable land management techniques. This achievement forms a core part of the project.    From the standpoint of developing the regulatory framework for the project, there has been notable progress. Various tools (Policy, Strategy, Plan, Texts, Decrees, Laws, Topical Reports and other reference documents, etc.) stemming from the implementation of political, legislative and institutional frameworks that are favorable to private investment in gasification are validated, available and registered at the National Library of Benin. Including: (i) Creation of a development policy for electricity production using biomass gasification accompanied by a regulatory/legal framework favorable to investments in the private sector; (ii) Evaluation of the implementation of a one-stop shop for independent electricity producers using Renewable Energy in Benin; (iii) Creation of procedures and rules for implementation of markets for supplying biomass following the appropriate standards in Benin; (iv) Creation of criteria and definition of guidelines and methodology for environmental, economic and financial evaluation of biomass gasification plant projects; etc. It is detailed in the DO progress table.    There has been good progress in Outcome 3, which is to do with reforestation; with 200 ha of land set aside for the pilot projects.    In term of risk, the project has a major Financial risk, linked to the Financial mechanism. The Financial Support Mechanism (FSM) was set up to provide direct support to private sector investors, with an initial capital of USD 1,500,000 ($ 1,300,000 from GEF funds and $ 200,000 from UNDP). The main objective of the FSM in promoting electricity generation utilizing gasifiers operating on renewable biomass from agricultural waste in Benin will be to provide more security to project developers/IPPs by giving them some level of protection against the risk of payment default for electricity already supplied to the SBEE (the power utility) main grid or isolated mini-grid.  Since finalization of the project document, UNDP-GEF has started to undertake a detailed analysis of the financial mechanisms proposed in its projects and in particular to ensure alignment and compliance with existing financial rules and regulations. It has emerged from this review that the above proposed modality, which would require a cash transfer from UNDP to the Central Bank at the beginning of the project, to capitalize the mechanism, is not in compliance with UNDP rules. Instead it is proposed to amend the project document by retaining the funds in UNDP accounts (as part of the project) and for UNDP to act as the manager of the funds. The actual disbursements of payments are considered “expenses” as per UNDP’s definition of the term and can be seen as “performance-based payments”.    It is recommended that the project should commission the detailed design of the proposed FSM, with full operating and governance rules and guidelines. In this way, there should be no negative impact on the proposed implementation of the project.    The project has also started the MTR process.    Although the project achieved tangible results so far. The rating given by the CO and the PMU as Highly Satisfactory seems overly too ambitious. The project is indeed struggling with the Financial Support Mechanism. Instead, the RTA is granting Satisfactory rating to both DO and IP progress. | |

# Gender

**Progress in Advancing Gender Equality and Women's Empowerment**

This information is used in the UNDP-GEF Annual Performance Report, UNDP-GEF Annual Gender Report, reporting to the UNDP Gender Steering and Implementation Committee and for other internal and external communications and learning.  The Project Manager and/or Project Gender Officer should complete this section with support from the UNDP Country Office.

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| **Gender Analysis and Action Plan:** [Gender Analysis and Action Plan.docx](https://undpgefpims.org/attachments/5115/213821/1717507/1723968/Gender%20Analysis%20and%20Action%20Plan.docx) |
| **Please review the project's Gender Analysis and Action Plan. If the document is not attached or an updated Gender Analysis and/or Gender Action Plan is available please upload the document below or send to the Regional Programme Associate to upload in PIMS+. Please note that all projects approved since 1 July 2014 are required to carry out a gender analysis and all projects approved since 1 July 2018 are required to have a gender analysis and action plan.** |
| *(not set or not applicable)* |

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| **Please indicate in which results areas the project is contributing to gender equality (you may select more than one results area, or select not applicable):** |
| Contributing to closing gender gaps in access to and control over resources: Yes |
| Improving the participation and decision-making of women in natural resource governance: Yes |
| Targeting socio-economic benefits and services for women: Yes |
| Not applicable: No |

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| **Atlas Gender Marker Rating** |
| **GEN2:** gender equality as significant objective |

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| **Please describe any experiences or linkages (direct or indirect) between project activities and gender-based violence (GBV). This information is for UNDP use only and will not be shared with GEF Secretariat.** |
| The Biomass Electricity Project has not directly reviewed or been informed of gender-based violence in the context of its activities or related to its activities.  However, during the preparation of Revenue-Generating Activities (AGR, French acronym), it was shown that women were not sufficiently represented in awareness and information sessions because men in the villages tried to put themselves forward to be among the first beneficiaries. But with the explanations of the imperative necessity of including 50% women and girls and 50% men, the trend changed and women said that they were encouraged by their spouses.    Also, the resources injected into the local economy through compensation for the local workforce at the level of 439,820.3564 USD in activities connected to the reforestation campaign of which 105,556.8855 USD benefited women (24%), improved women's living conditions and their social position through development of revenue-generating activities/benefits. The Biomass Electricity Project fights against domestic violence and creates a good household environment, allowing men, women and children to flourish. |

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| **Please specify results achieved this reporting period that focus on increasing gender equality and the empowerment of women.**    **Please explain how the results reported addressed the different needs of men or women, changed norms, values, and power structures, and/or contributed to transforming or challenging gender inequalities and discrimination.** |
| The Biomass Electricity Project is a mitigation project that guides communities and actors in the Energy sector to reduce greenhouse gas emissions. There are four (4) components in addition to the one for project management. The goals of each of the development actions are all aimed at the communities with a particular emphasis on respecting the quotas of men, women and young people who benefit, in order to promote gender equality and to fight against the inequality observed. Inequalities are seen in the following areas: (i) women are overrepresented in the populations who do to have access to modern energy, (ii) women's energy needs are not taken into account and (iii) women are excluded from decision-making processes. This is verified by the nature of different metrics included in the document framework logic for the project. In summary, there is a larger gender disparity at the national level; this is even more accentuated in rural areas, including in the areas involved in the project. These inequalities are always at the expense of women, who are generally marginalized and underestimated in the activities and more particularly in areas related to energy sector management, where they are rarely involved.    In this context, gender remains a priority in the implementation of the Biomass Electricity Project. It is founded on (i) promotion of equal participation and decision-making of women in the prevention and mitigation of conflicts, mediation and peace consolidation; (ii) equal participation of women in decision-making processes for climate change mitigation and reduction of catastrophe risk; (iii) assuring that women benefit equally from local development, job creation, first line service provision and reintegration programs in post-conflict or post-catastrophe situations.    To achieve this, to date, the project has made the following progress: (i) systematic integration of gender and vulnerable communities and equality of sexes in project activities; (ii) awareness and advocacy with national institutions, local authorities, villages, traditional dignitaries and leaders, community leaders for areas involved in the Biomass Electricity Project to take gender equality into account in the various decision-making bodies to be setup in the these communes and at the national level; (iii) increasing awareness of women to integrate issues related to climate change into their daily activities; (iv) participation of women (1) in the project governance bodies (Project Technical Committee); (2) planning, monitoring and evaluation of field activities; (v) implementing activities through field missions, workshops, etc. (vi) support for empowering women in the context of revenue-generating activities/benefits (AGR/B, French acronym); and (vii) carrying out a study on inequality of access and conflicts of interested connected to land and forest management in communes involved in the project (Kalalé, Djougou, Savalou, Dassa-Zoumè). This study has shown the paths to follow for each community to (1) improve consideration of gender in project activities; (2) reduce women's inequality, particularly in terms of access to land management; and (3) increase awareness of women's empowerment.    Because of including gender in the implementation of the project (i) participation in reforestation activities as part of the 2018 campaign included 2,026 people, of which 523 were women (26%) and (ii) improvement was seen in the local economy through compensation for the local workforce for completing project activities in the communes at the level of 502,897.2127 USD of which 439,820.3564 USD was directly linked to the reforestation campaign and 105,556.8855 USD benefited women (24%).    Also, the Electricity Biomass Project needs the guidance and advisory support from the DGEFC of 30 Water, Forest and Hunting Agents, of which 12 are women (40%).    In terms of field missions, and awareness and advocacy sessions in base communities, the project recorded 2,628 participants, including 809 women (31%).  Women are also represented in project governance bodies at the rate of 16% (130 participants, 21 of which were women) during the period under review. |

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| **Please describe how work to advance gender equality and women's empowerment enhanced the project's environmental and/or resilience outcomes.** |
| To date, the project has made the following progress: (i) systematic integration of gender and vulnerable communities and equality of sexes in project activities; (ii) awareness and advocacy with national institutions, local authorities, villages, traditional dignitaries and leaders, community leaders for areas involved in the Biomass Electricity Project to take gender equality into account in the various decision-making bodies to be setup in the these communes and at the national level; (iii) increasing awareness of women to integrate issues related to climate change into their daily activities; (iv) support for empowering women in the context of revenue-generating activities/benefits (AGR/B, French acronym); and (v) carrying out a study on inequality of access and conflicts of interested connected to land and forest management in communes involved in the project (Kalalé, Djougou, Savalou, Dassa-Zoumè). This study has shown the paths to follow for each community to (1) improve consideration of gender in project activities; (2) reduce women's inequality, particularly in terms of access to land management; and (3) increase awareness of women's empowerment.    During implementation of Revenue-Generating Activities/Benefits (AGR/B, French acronym), the management team paid particular attention to respecting gender awareness and information. Six (6) female groups (4 in Pélébina and 2 in Bouca) were considered for AGR equipment acquisition. More than forty (40) women in these groups directly benefited without any third party intervention from twelve (12) shellers (corn, soy and peanuts), six (6) grain mills (corn, peanuts, sorghum, millet, etc.), three (3) tuber raspers, three (3) double screw manual presses. This substantial support increases the financial contribution of the Biomass Electricity Project to improving living conditions and work for women living in rural areas.    The Biomass Electricity Project has also contributed to the local economy through compensation for local workforces. The resources injected for this reached 439,820.3564 USD in activities connected to the reforestation campaign of which 105,556.8855 USD benefited women (24%), improving women's living conditions and their social position through development of revenue-generating activities/benefits. The Biomass Electricity Project fights against domestic violence and creates a good household environment, allowing men, women and children to flourish. |

# Social and Environmental Standards

**Social and Environmental Standards (Safeguards)**

The Project Manager and/or the project’s Safeguards Officer should complete this section of the PIR with support from the UNDP Country Office. The UNDP-GEF RTA should review to ensure it is complete and accurate.

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| **1) Have any new social and/or environmental risks been identified during project implementation?** |
| *(not set or not applicable)* |

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| **If any new social and/or environmental risks have been identified during project implementation please describe the new risk(s) and the response to it.** |
| No risk identified during the period under review |

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| **2) Have any existing social and/or environmental risks been escalated during the reporting period? For example, when a low risk increased to moderate, or a moderate risk increased to high.** |
| No |

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| **If any existing social and/or environmental risks have been escalated during implementation please describe the change(s) and the response to it.** |
| no change in existing risk |

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| **SESP:** [PIMS 5115 Benin MFA revised SESP 13Oct2015.docx](https://undpgefpims.org/attachments/5115/213821/1680900/1681193/PIMS%205115%20Benin%20MFA%20revised%20SESP%2013Oct2015.docx)  **Environmental and Social Management Plan/Framework:** *not available* |
| **For reference, please find below the project's safeguards screening (Social and Environmental Screening Procedure (SESP) or the old ESSP tool); management plans (if any); and its SESP categorization above. Please note that the SESP categorization might have been corrected during a centralized review.** |
| [SESP BIOMASSE 2019 16 07 2019.pdf](https://undpgefpims.org/attachments/5115/213821/1727820/1741951/SESP%20BIOMASSE%202019%2016%2007%202019.pdf) |

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| **3) Have any required social and environmental assessments and/or management plans been prepared in the reporting period? For example, an updated Stakeholder Engagement Plan, Environmental and Social Impact Assessment (ESIA) or Indigenous Peoples Plan.** |
| No |

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| **If yes, please upload the document(s) above. If no, please explain when the required documents will be prepared.** |
| *(not set or not applicable)* |

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| **4) Has the project received complaints related to social and/or environmental impacts (actual or potential )?** |
| No |

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| **If yes, please describe the complaint(s) or grievance(s) in detail including the status, significance, who was involved and what action was taken.** |
| *(not set or not applicable)* |

# Communicating Impact

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| **Tell us the story of the project focusing on how the project has helped to improve people’s lives.**  **(This text will be used for UNDP corporate communications, the UNDP-GEF website, and/or other internal and external knowledge and learning efforts.)** |
| The Project impacted community life through development actions that can be summarized as follows: strengthening skills for communities, institutions and the private sector to promote development of electricity production from biomass as a renewable source of energy in Benin.  During the reference period, in support of the reforestation campaign, the Biomass Electricity Project impacted jobs, the economy and living conditions for people in the communes involved.  - In terms of employment:  For reforestation activities, three private sector partners were recruited (one in Savalou, one in Djougou and one in Kalalé) to handle reforestation of 200 hectares (100 hectares in Kalalé, 50 hectares in Djougou and ?? hectares in Savalou). These businesses called upon approximately 2,026 people for the seasonal and permanent workforce who worked as everything from longshoremen to planters, including hay raking, hole digging, picketing and plant transportation. Still in the context of the reforestation, we should add the uncounted staff handling indirect jobs, including people who handled plant production in nurseries and transporters. All of these people were employed thanks to GEF financing provided through the Biomass Electricity Project.  Also, in terms of jobs, two research laboratories at the University of Abomey-Calavi and a study office were recruited to carry out some studies ordered by the project. They also called upon nine university researchers and about twenty students, as well as experts and investigators in the field during the field phase.  - Economy  The economy was impacted both at the local and national level. At the local level, 502,897.2127 USD was directly injected into the local economy, of which 439,820.3564 USD was directly invested in activities connected to the reforestation campaign. In this analysis it is important to include small restaurateurs who saw their business increase during the work.  At the national level, thanks to the studies 87,101.7460 USD was injected into the national economy.  - Living conditions  In addition to what was done during the first year of implementation and what continued during the period under review, the Project continued to impact living conditions in communities through development actions such as providing Revenue-Generating Activity (AGR) equipment, the provision of solar street lights and support for the commune in the context of sanitation activities. The project gave the communes of Kalalé and Djougou:  - AGR equipment: twelve (12) shellers (corn, soy, peanuts), six (6) grain mills (corn, peanuts, sorghum, millet, etc.) three (3) tuber raspers, three (3) double screw manual presses and agricultural machines, including four (4) tillers and sixteen (16) weeders, which were provided to river communities, including six (6) women's groups.  - Solar panels: About twenty photovoltaic solar street lights were deployed in the villages of Bouca (Kalalé et de Kakindoni, Wassa Djéou, Goumbakou) and Djougou in order to serve populations who had made fields available to the project for reforestation from 2017 until now. |

**Knowledge Management, Project Links and Social Media**

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| **Please describe knowledge activities / products as outlined in knowledge management approved at CEO Endorsement /Approval.**    **Please also include: project's website, project page on the UNDP website, blogs, photos stories (e.g. Exposure), Facebook, Twitter, Flickr, YouTube, as well as hyperlinks to any media coverage of the project, for example, stories written by an outside source. Please upload any supporting files, including photos, videos, stories, and other documents using the 'file lirbary' button in the top right of the PIR.** |
| Project website:    N/A    Project page on UNDP web site :    http://www.bj.undp.org/content/benin/fr/home/operations/projects/environment\_and\_energy/projet-de-promotion-de-la-production-durable-de-biomasse-electri.html    Social Network:  N/A    Other Publications about the Project    https://lanouvelletribune.info/2017/12/production-durable-biomasse-electricite-benin-conclave-acteurs/  https://24haubenin.info/?Le-Pnud-et-le-gouvernement-ont-signe-le-document-du-Projet-Biomasse-electricite  https://beninwebtv.com/2017/12/benin-energie-renouvelable-vers-mise-oeuvre-dun-projet-de-production-de-biomasse/  http://www.lapressedujour.info/projet-biomasse-electricite-le-benin-se-dote-encore-de-4mw/ |

# Partnerships

**Partnerships & Stakeholder Engagment**

Please select yes or no whether the project is working with any of the following partners. Please also provide an update on stakeholder engagement. This information is used by the GEF and UNDP for reporting and is therefore very important!  All sections must be completed by the Project Manager and reviewed by the CO and RTA.

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| **Does the project work with any Civil Society Organisations and/or NGOs?** |
| *(not set or not applicable)* |

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| **Does the project work with any Indigenous Peoples?** |
| Yes |

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| **Does the project work with the Private Sector?** |
| Yes |

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| **Does the project work with the GEF Small Grants Programme?** |
| Yes |

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| **Does the project work with UN Volunteers?** |
| Yes |

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| **Did the project support South-South Cooperation and/or Triangular Cooperation efforts in the reporting year?** |
| Yes |

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| **CEO Endorsement Request:** [PIMS 5115 Benin MFA revised CEO ER 01May2016.docx](https://undpgefpims.org/attachments/5115/213821/1680899/1681208/PIMS%205115%20Benin%20MFA%20revised%20CEO%20ER%2001May2016.docx) |
| **Provide an update on progress, challenges and outcomes related to stakeholder engagement based on the description of the Stakeholder Engagement Plan as documented at CEO endorsement/approval (see document below). If any surveys have been conducted please upload all survey documents to the PIR file library.** |
| For the period addressed in the PIR, the Biomass Electricity Project executed its activities by involving the private sector at various levels, in application of the laws in force in Benin on the Public-Private Partnership (PPP). For informational purposes, examples of activities implemented at different phases of execution with the private sector actors were as follows:    - Recruitment of providers from the private sector for topographical and cartographic surveys of the areas for reforestation: in the communes of Kalalé, Djougou, Savalou. Providers recruited by the National Project Directorate in collaboration with the Person Responsible for Public Markets (PRMP, French acronym) from the Ministry of Energy for each of the reforestation sites.  - Recruitment of Providers from the private sector for implementation, maintenance and surveillance of the plantations: Several providers recruited by the National Project Directorate in collaboration with the Person Responsible for Public Markets (PRMP, French acronym) from the Ministry of Energy. This allowed 400 hectares of plantations to be effectively reforested with tree species (Gmelina arborea, Acacia auriculiformis, Cassia Senna siamea, Eucalyptus camaldulensis, Calceidra, Teck) in three (3) of the four (4) communes involved.  - Recruitment of providers from the private sector for installation and functional setup of resilient solar street lamps to people in areas that are far from the national electric network for public lighting. These locations are: BOA development unit, Kalalé development unit (Nassiconzi) and Bouca-Centre in the commune of Kalalé and Goubakou, Wassa, Pélébina, Koha, and Djéhou in the commune of Djougou. These providers from the private sector were recruited by the National Project Directorate in collaboration with the Person Responsible for Public Markets (PRMP, French acronym) from the Ministry of Energy for the beneficiary sites involved.  - Recruitment of offices/study offices, consultants, service centers for carrying out topical studies. They were recruited by the National Project Directorate in collaboration with the Person Responsible for Public Markets (PRMP, French acronym) from the Ministry of Energy for assignments related to the Biomass Electricity Project actions.  - Also in the context of constructing gasification plants, and after the informational workshop organized on December 12, 2017, the project had discussions with several potential private investors (IPP) such as ENI Benin, TMG Africa, DAPE, Consorcio Construtor de Esteadas – CCE-ATPSE, Talaro. These IPPs were interested in constructing the plants and participated in several of our meetings and workshops for validation of sector documents created by the project.    The Biomass Electricity Project worked with the GEF Coordination, Small Grants Programme (SGP) of Benin in the context of conducting topical studies and strategical considerations for project implementation. In addition to being a permanent member of the project's technical committee, the SGP is part of a pool of experts implemented to evaluate the topical study reports in advance.    Furthermore, in the context of considerations of the MSF, the Small Grants Programme played an important role, specifically in searching for partners for the MSF and also allowed for discussions with UNCDF, with whom several video conferences were held. Also, in the context of the feasibility study for construction the four (4) plants, SGP is part of a pool of experts responsible for framing and monitoring the study.    At the start of the project, five (5) United Nations Volunteers (UNV) were working with the Biomass Electricity Project of which three (3) were women and two (2) were men; they actively contributed to the project's activities. To date two (2) women and one (1) man have continuously been working on the project since the departure of two UNVs for other professional opportunities.    In August 2018, the achievements, best practices and experiences of the Biomass Electricity Project in Benin were presented to various countries at the 2018 meeting of the African for South-South cooperation. This high-level meeting aimed to promote the role of African countries as South-South partner/providers with their neighbors. Under the leadership of the UNDP African Bureau based in Addis Ababa (Ethiopia), this meeting aimed to bring together national delegations interested in hearing and learning about these experiences to potentially encourage South-South and Triangular partnerships and future collaborations. Several strategic tools on market development for electricity production using biomass gasification were presented. The reforestation approach involving the private sector and the river populations was shared with other countries considering a innovations. This event for best practices and experiences focused on carrying out the ODDs in Botswana, Benin, Kenya and Mauritius Island; these best practices could be promoted, adapted, reproduced, scaled up or exported to other peer countries.    Also, in the context of researching successful experiences in gasification, contracts were drawn-up with Cambodia through the rice ball gasification project in the village of Charchuk thanks to the support of the UNIDO, IEDInvest and REEEP (Renewable Energy and Energy Efficiency Partnership). Experiences were shared and discussions were advanced for a study visit. |

# Annex - Ratings Definitions

**Development Objective Progress Ratings Definitions**

(HS) Highly Satisfactory: Project is on track to exceed its end-of-project targets, and is likely to achieve transformational change by project closure. The project can be presented as 'outstanding practice'.

(S) Satisfactory: Project is on track to fully achieve its end-of-project targets by project closure. The project can be presented as 'good practice'.

(MS) Moderately Satisfactory: Project is on track to achieve its end-of-project targets by project closure with minor shortcomings only.

(MU) Moderately Unsatisfactory: Project is off track and is expected to partially achieve its end-of-project targets by project closure with significant shortcomings. Project results might be fully achieved by project closure if adaptive management is undertaken immediately.

(U) Unsatisfactory: Project is off track and is not expected to achieve its end-of-project targets by project closure. Project results might be partially achieved by project closure if major adaptive management is undertaken immediately.

(HU) Highly Unsatisfactory: Project is off track and is not expected to achieve its end-of-project targets without major restructuring.

**Implementation Progress Ratings Definitions**

(HS) Highly Satisfactory: Implementation is exceeding expectations. Cumulative financial delivery, timing of key implementation milestones, and risk management are fully on track. The project is managed extremely efficiently and effectively. The implementation of the project can be presented as 'outstanding practice'.

(S) Satisfactory: Implementation is proceeding as planned. Cumulative financial delivery, timing of key implementation milestones, and risk management are on track. The project is managed efficiently and effectively. The implementation of the project can be presented as 'good practice'.

(MS) Moderately Satisfactory: Implementation is proceeding as planned with minor deviations. Cumulative financial delivery and management of risks are mostly on track, with minor delays. The project is managed well.

(MU) Moderately Unsatisfactory: Implementation is not proceeding as planned and faces significant implementation issues. Implementation progress could be improved if adaptive management is undertaken immediately. Cumulative financial delivery, timing of key implementation milestones, and/or management of critical risks are significantly off track. The project is not fully or well supported.

(U) Unsatisfactory: Implementation is not proceeding as planned and faces major implementation issues and restructuring may be necessary. Cumulative financial delivery, timing of key implementation milestones, and/or management of critical risks are off track with major issues and/or concerns. The project is not fully or well supported.

(HU) Highly Unsatisfactory: Implementation is seriously under performing and major restructuring is required. Cumulative financial delivery, timing of key implementation milestones (e.g. start of activities), and management of critical risks are severely off track with severe issues and/or concerns. The project is not effectively or efficiently supported.