



# Integration of electric mobility with renewable energy in peri-urban and rural areas around cities in Cote d'Ivoire

Review CEO Endorsement and Make a recommendation

## Basic project information

**GEF ID**

11042

**Countries**

Cote d'Ivoire

**Project Name**

Integration of electric mobility with renewable energy in peri-urban and rural areas around cities in Cote d'Ivoire

**Agencies**

UNIDO

**Date received by PM**

2/28/2023

**Review completed by PM**

11/2/2023

**Program Manager**

Patricia Marcos Huidobro

**Focal Area**

Climate Change

**Project Type**

MSP

**PIF**

**CEO Endorsement**

**Part I ? Project Information**

**Focal area elements**

**1. Does the project remain aligned with the relevant GEF focal area elements as presented in PIF (as indicated in table A)?**


Secretariat Comment at CEO Endorsement Request

**11/8/2023 PM:**

**Cleared.**

**11/6/2023 PM:**

**No.** Since UNIDO's request for dual executing function has been approved by the GEF, please add UNIDO under Executing Partner Name in the information section.

**Part I: Project Information** 

<b>GEF ID</b> 11042		<b>Project Type</b> MSP
<b>Type of Trust Fund</b> GET	<b>CBIT/NGI</b> CBIT No      NGI No	<b>Project Title</b> ⓘ Integration of electric mobility with renewable energy in peri-urban and rural areas around cities in Côte d'Ivoire
<b>Countries</b> Cote d'Ivoire		<b>Agency(ies)</b> UNIDO
<b>Other Executing Partner(s)</b> ⓘ Ministry of Transport (MoT) <span style="background-color: yellow; display: inline-block; width: 100px; height: 1em;"></span>		<b>Executing Partner Type</b> Government <span style="background-color: yellow; display: inline-block; width: 100px; height: 1em;"></span>
<b>GEF Focal Area</b> ⓘ Climate Change		<b>Sector</b> ⓘ Technology Transfer/Innovative Low-Carbon Technologies

3/29/2023 PM:

Yes.

Agency Response

*UNIDO Response November 2023:*

Done. Since there is no way to add lines for additional Executing Partners, UNIDO's name was added next to Ministry of Transport with an indication on the Executing Partner Types right next to the respective names.

<b>Executing Partner</b> ⓘ	<b>Executing Partner Type</b>
Ministry of Transport (MoT) - Government; UNIDO - GEF Age	Others <span style="float: right;">▼</span>

**Project description summary**

**2. Is the project structure/design appropriate to achieve the expected outcomes and outputs as in Table B and described in the project document?**

Secretariat Comment at CEO Endorsement Request  
7/28/2023 PM:

**Cleared.**

**3/29/2023 PM:**

**Yes, with suggestions.** Please remove the text under Table B on explanation on investment mobilized, since it is repeated under Table C, where it actually belongs.

Agency Response amended as suggested.

**3. If this is a non-grant instrument, has a reflow calendar been presented in Annex D?**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

N/A.

Agency Response done.

**Co-financing**

**4. Are the confirmed expected amounts, sources and types of co-financing adequately documented, with supporting evidence and a description on how the breakdown of co-financing was identified and meets the definition of investment mobilized, and a description of any major changes from PIF, consistent with the requirements of the Co-Financing Policy and Guidelines?**

Secretariat Comment at CEO Endorsement Request

**10/26/2023 PM:**

**Cleared.**

**7/28/2023 PM:**

**Cleared with suggestions.** All co-financing raised is in-kind co-financing except for US\$40k from UNIDO. During the implementation phase the project will work towards securing additional cash co-financing and/or explore alternatives with other partners. *Additional co-financing will be reported in the Project Implementation Report (PIR). Please consider adding this explanation on the CEO Endorsement document.*

**3/29/2023 PM:**

**No.** Please address/clarify the following comments:

- Although co-financing has been increased from PIF stage, all co-financing raised is in-kind co-financing except for US\$ 40k from UNIDO. Please elaborate further on the efforts to raise grant co-financing for the project.

- The Ivorian Office of Parks and Reserves would support the project by covering the costs of building and maintaining infrastructure. Please clarify how the resources used for building infrastructures would be channeled to the project, and whether they shall be tagged as in-kind or grant.

- Likewise, the MoT would support the project by financing the purchase of EV models and EV charging stations. Please clarify how MoT resources used for purchasing EV and charging infrastructure would be channeled to the project, and whether they shall be tagged as in-kind or grant.

- The following co-financiers have been tagged as "Private Sector". Please clarify the nature of these institutions and rename as need be:

- Council of Panafrica Doctors in Environment

- Groupe Africain pour le Development de l'eau, l'energie et l'environnement (A3E).

- CATALYSTE

- The co-financing letter from the Ministry of Transport states a contribution of approximately US\$ 19 million, which is not consistent with the US\$ 9 million figure in Section C. Please amend.

## Agency Response

### ***UNIDO Response October 2023:***

As suggested; the wording "During the implementation phase the project will work towards securing additional cash co-financing and/or explore alternatives with other partners. Additional co-financing will be reported in the Project Implementation Report (PIR)." is added under the relevant sections including in the box under the co-financing table as well as in the narrative sections highlighted with blue.

***GEF Sec. Comment:*** *Although co-financing has been increased from PIF stage, all co-financing raised is in-kind co-financing except for US\$ 40k from UNIDO. Please elaborate further on the efforts to raise grant co-financing for the project.*

The type of the co-financing stays the same as agreed during the PIF. However, during the implementation phase, the project will work towards facilitating the securing of additional cash co-financing and/or explore alternatives with other partners active in C?te d'Ivoire and in the

region. The project team will conduct further stakeholders consultations to mobilize national/governmental co-finance (by means of grants or by public loans, usually on favourable terms). Additional co-financing will be reported in the Project Implementation Report (PIR).

**GEF Sec. Comment:** *The Ivorian Office of Parks and Reserves would support the project by covering the costs of building and maintaining infrastructure. Please clarify how the resources used for building infrastructures would be channelled to the project, and whether they shall be tagged as in-kind or grant.*

The Ivorian Office of Parks and Reserves (OIPR) manages the country's national parks and reserves. The OIPR has tested e-bikes in the Réserve Naturel Dahlia Fleur for tourist travel and the patrol of agents.

The co-financing of the OIPR are the in-kind contributions covers the cost of using the building facilities (e.g., for training venues) and infrastructure, experts time, mobilizing local network and strengthening monitoring operations in the management of the Banco National Park and the Réserve Naturel Dahlia Fleur channelling to the project. In addition, the OIPR will share lessons learned from their experience in deploying e-bikes in order to ensure an improved and more efficient deployment of these e-bikes in the Banco Park and Réserve Naturel Dahlia Fleur as well as in the INPHB campus in Yamoussoukro. The OIPR experts will also support the feasibility studies (data collection, consultations, etc.) for these specific sites.

**GEF Sec. Comment:** *Likewise, the MoT would support the project by financing the purchase of EV models and EV charging stations. Please clarify how MoT resources used for purchasing EV and charging infrastructure would be channeled to the project, and whether they shall be tagged as in kind or grant.*

As part of the ecological transition of the transport sector in Côte d'Ivoire, the Government, through the Ministry of Transport, has initiated several actions aimed at promoting e-mobility in the country. The resources mobilized to finance these actions consist of support funds for several initiatives, in particular the "Bus Rapid Transit (BRT)" project of the Abidjan Urban Mobility Project (PMUA). These initiatives aim to promote the establishment of a large fleet of EVs of several types (taxis, minicars, etc.), including the acquisition of EVs as part of the annual allocation of administrative vehicles.

Given that all of these actions contribute to the same goals as the project "Integration of electric mobility with renewable energies in Côte d'Ivoire", the MoT commits the resources mobilized under these actions as co-financing to the project and shall be tagged as in kind.

**GEF Sec. Comment:** *The following co-financiers have been tagged as "Private Sector". Please clarify the nature of these institutions and rename as need be:*

- Council of Panafrican Doctors in Environment (COPADEN)
- Groupe Africain pour le Développement de l'eau, l'énergie et l'environnement (A3E).

- CATALYSTE

Apologies for the typo, the entities have been reclassified. COPADEN and Catalyste+ are NGOs. A3E is a private sector entity.

The Group A3E is a private company which works on promoting universal and sustainable access to water, energy, and in the preservation of the environment in Africa. A3E will provide technical expertise to the project by specifically supporting the development of recommendations targeting promoters and the private sector in general. Their role is important to set-up new business models which involves actions between all stakeholders to spread the needed investment as well as inviting and supporting suppliers of electric mobility (and companies such as those offering recharge facilities) to supply electric mobility solutions in Cote d'Ivoire and by bringing them together with financiers to introduce electric mobility.

COPADEN is a non-governmental institution dedicated to environmental issues closely affecting the African continent and will provide technical expertise to the project by developing recommendations on regulation and financial mechanisms, in the identification of the sites and target groups and in developing the scale up strategy.

Catalyste + is a Canadian non-profit organization for environmental, economic and social actions and will focus on strengthening the capacities of the national stakeholders. In Cote d'Ivoire the organisation has collaborated with partners from the public and private sectors to improve the economic and social well-being of vulnerable communities in sectors that employ or involve women and marginalized groups. Through the Accelerating Women's Empowerment program, Catalyste + is involved in strengthening the capacity of small businesses, operators, organizations and institutions operating in agribusiness. Their program provides technical assistance to improve production, productivity and income generation among women farmers and owners of micro, small and medium-sized enterprises (MSMEs), **especially in the cassava value chain.**

***GEF Sec. Comment:** The co-financing letter from the Ministry of Transport states a contribution of approximately US\$ 19 million, which is not consistent with the US\$ 9 million figure in Section C. Please amend.*

The total investment committed by the Ministry of Transport in its letter of co-financing is USD 19 million (including indirect support to the project). However, during the PPG it is assessed that only USD 9 million of this co-financing is a tangible and realistic amount relevant to the project's targets. Please see the highlighted part under the Section C.

#### **GEF Resource Availability**

**5. Is the financing presented in Table D adequate and does the project demonstrate a cost-effective approach to meet the project objectives?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.  
**Project Preparation Grant**

**6. Is the status and utilization of the PPG reported in Annex C in the document?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.  
**Core indicators**

**7. Are there changes/adjustments made in the core indicator targets indicated in Table E? Do they remain realistic?**

Secretariat Comment at CEO Endorsement Request  
10/26/2023 PM:

**Cleared.** An updated GHG spreadsheet has been submitted and values for Core Indicator #6 seems reasonable and have been updated across the CEO Endorsement document.

**7/28/2023 PM:**

**No.** We acknowledge the submission of the GHG spreadsheet. However, from the spreadsheet is still unclear the timeline for the calculations, i.e. 5 years (Cells K17, F84), 10 years (Cell K19) or 20 years (Cells E25)? As explained below and as per the GEF guidelines, the timeline shall be the lifetime of the equipment. This shall be applied to both, direct and indirect emissions. Also, please provide the sources for some of the key data provided, i.e. l/100km, km/litre fuel consumption, etc.



## Agency Response

### ***UNIDO Response October 2023:***

The GHG Spreadsheet is updated to cover the emissions from the technology lifetime (20 years), and the sources are provided. As a result, the direct and indirect emission reductions are slightly increased and this change is reflected in the project sections and logframe. Most of the data sources (incl. fuel consumption) are taken from the GEF Manual on calculating GHG emissions from transport projects and adapted to CIV conditions (e.g., inefficient and old vehicle fleets). In addition, the spreadsheet is better arranged to increase readability. Please find attached the updated GHG Emission reduction calculation spreadsheet.

***GEF Sec. Comment:*** As suggested at PIF stage, please do provide an excel sheet with the GHG calculation to facilitate the tracking of the calculations as need be.

Done. Please find it uploaded to the portal.

***GEF Sec. Comment:*** Please check Core Indicator 11. From the explanation on targets at the bottom of the table, the women beneficiaries are between 30-50% of the total beneficiaries [depending on the activity]. If this is the case, the breakdown of beneficiaries? equivalent to 75% women and 25% men is not right. Please ask Agency to review and correct.

Done. Please note that as per the estimations the total breakdown of beneficiaries is equivalent to approximately 32% women and 68% men (20,530 women and 43,570 men out of 64,100 total beneficiaries).

***GEF Sec. Comment:*** Update/correct the figures in section 1.6 Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF), which shows a balanced distribution of beneficiaries 50% women, 50% men. This is not consistent with what is presented in the Core Indicator 11.

Updated.

## **Part II ? Project Justification**

**1. Is there a sufficient elaboration on how the global environmental/adaptation problems, including the root causes and barriers, are going to be addressed?**

Secretariat Comment at CEO Endorsement Request

**7/28/2023 PM:**

**Cleared.**

**3/29/2023 PM:**

**No.** At the beginning of this section, the agency provides a list of the key changes between PIF and CEO Approval stage. However, a few key changes are missing, such as:

- Changes in the project components, i.e. there is a new component 3.1.3.
  
- Changes in the Executing Agency of the project, from the Ministry of Environment at PIF stage to the Ministry of Transport at CEO Approval. A letter from the OFP informing of this change has been submitted as an evidence in the portal, but please explain this change further under this section.
  
- Changes in the suggested business model. The business model focus seemed to have changed from battery charging to battery swapping. This is an important change which hasn't been reflected under this section, including an explanation for this change.

Agency Response

**GEF Sec. Comment:** Changes in the project components, i.e. there is a new component 3.1.3.

Please see updated parts highlighted in the beginning of the Part II Section. The following change was made as below:

**The Output 3.1.3 is included as below ?Assessment of opportunities for localizing value chains of electric vehicles and renewable powered charging stations?.**

In consultation with governmental stakeholders, the project structure is amended to include a new output 3.1.3 to assist the efforts in assessing the possibility of localizing value chains for the manufacturing and assembling of EVs and spare parts in the country. Activities under this output will be closely coordinated with INBHP and ECREEE. The output will develop an assessment study on local value chains for vehicles and solar charging infrastructure and the use of new mobility concepts with the active participation of local partners (farming communities, agricultural colleges, cooperative societies, agricultural service centres, etc.). This assessment will establish the future development of a roadmap for the local supply of e-vehicles that considers ?made in Africa? and planning for in country builds.

**GEF Sec. Comment:** Changes in the Executing Agency of the project, from the Ministry of Environment at PIF stage to the Ministry of Transport at CEO Approval. A letter from the OFP informing of this change has been submitted as an evidence in the portal, but please explain this change further under this section.

Please see updated parts highlighted in the beginning of the Part II Section. The following change was made as below:

**Institutional arrangements to change the executing agency of the project:** Following consultations with the government counterpart, roles and responsibilities of the main stakeholders are identified and elaborated. The Ministry of Transport will act as the Lead National Execution Partner. This is a change in comparison to the PIF stage where the Ministry of Environment and Sustainable Development was anticipated to act as the Executing Agency of the project. During the PPG phase, further information was collected and the Ministry of Transport is evaluated as a more suitable institution for the execution of services and activities under the project considering the project technical focus area and their network and outreach in the transport sector. Other relevant government institutions such as the Greater Abidjan Urban Mobility Authority (Autorité de la Mobilité Urbaine dans le Grand Abidjan ? AMUGA) will support the co-ordination of the project activities at the national level. In addition, it was agreed with the counterpart and the GEF OFP that UNIDO and ECREEE will provide targeted executional support to the project. A letter from the GEF OFP informing of this change has been submitted as an evidence.

**GEF Sec. Comment:** Changes in the suggested business model. The business model focus seemed to have changed from battery charging to battery swapping. This is an important change which hasn't been reflected under this section, including an explanation for this change.

Please see updated parts highlighted in the beginning of the Part II Section. The following change was made as below:

**Business model technology.** At the PIF stage, the project's business model focused on cable charging. During the PPG, it has been assessed that in addition to cable charging, the battery swapping technology could be viable under certain technical circumscription as endorsed by the national stakeholders. The project is not opting for only one business model (cable-charging technology, battery swapping or any other) but will select the most suitable technology based on the economic and technical feasibility studies that will be developed under the Component 2.

Under Output: 2.1.1, six pre-feasibility studies for integrated e-mobility technology demonstration projects will be developed. An assessment will be carried out and will provide an overview of the different charging solutions (smart cable charging technology vs. battery swapping) including operating environment considerations and business models developed; overview of financing options for Light Electric Vehicles (LEVs), e-bikes, e2Ws and e3Ws including best practices, and taxation instruments developed, etc.

Below are further elaborations on the battery swapping business model:

The International Council on Clean Transportation (ICCT)[1]<sup>1</sup> carried out Total cost of ownership (TCO) modelling for both cable-charged and battery swap E2Ws and petrol-fuelled

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2Ws. The results of its modelling for a setting in India found that the 5-year TCO of a cable-charged E2W was around 30% lower than for a battery swap, free-range E2W, which in turn had a 30% lower 5-year TCO than a petrol-fuelled 2W, for a private ownership situation (without considering opportunity cost). Modelling E2W use in ride-hailing, and adding a factor to account for the opportunity costs incurred through downtime while charging during the working day, found the 5-year TCO for the petrol-fuelled E2W to increase to around 15% more than a battery swap E2W. Given that the applications for the proposed GEF project are expected to result in utilisations somewhere between personal and ride-hailing use, it can be expected that the TCO of the cable-charge and battery swap electric vehicles would therefore be similar for this level of modelling (of a free-range application).

If the cost reductions expected are added to the use of fewer, dedicated battery swap stations, the potential to increase the life of the batteries, and the expectation that the EOL battery management will be more robustly provided through the stewardship of the battery swap service provider, the use of battery swapping becomes favoured. The battery swapping is technology advancing (including those that reduce the cost of the hardware and software involved) and other technology improvements are expected to enhance the case for battery swapping: in short, the advantages are such that battery swapping is expected to become a significant feature in the future provision of small-format electric vehicle mobility.

The demonstration of battery swapping technology can provide evidence-based technical data to the e-transport market, including the technical capacity, knowledge and experience required. The demonstration projects that the GEF project comprises are designed to set the country on a path of the accelerated adoption of the most viable electric vehicle technologies including battery swapping technologies.

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[1] <https://theicct.org/wp-content/uploads/2021/12/cost-compare-india-ice-2ws-1dvs-nov21.pdf>

**2. Is there an elaboration on how the baseline scenario or any associated baseline projects were derived?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.

**3. Is the proposed alternative scenario as described in PIF/PFD sound and adequate? Is there sufficient clarity on the expected outcomes and components of the project and a description on the project is aiming to achieve them?**

Secretariat Comment at PIF/Work Program Inclusion

7/28/2023 PM:

**Cleared.**

3/29/2023 PM:

**No.** Please clarify/elaborate further on the following issues:

- At CEO Endorsement stage, the focus of the project has been changed from a business model based on battery charging to a one based on battery swap. Please elaborate further on the rationale for this change, particularly given that the battery swap business model hasn't yet been tested globally and overall has proved to be less successful than the battery charging model. Also, there seems to be a project in Jacqueville which is also testing battery swap business model. Please reflect on the challenges and lessons learned from this project, and how these could be integrated into this project. Similarly, there was an unsuccessful e-bike pilot implementing by OIPR which used a battery swap model. The proposal shall elaborate further on the challenges faced by the e-bike pilot and build on these lessons learned for the proposed project.

- Please clarify if the pilot in Abidjan is also planning to use a battery swap model given that it would focus on LEV instead of 2-3 wheelers, and that a battery swap model presents more challenges in bigger cities.

- Some of the outcomes seem to overlap with the UNEP project (national child project GEF ID10302 Integrated, Sustainable and Low Emissions Transport in Cote d'Ivoire - <https://www.thegef.org/projects-operations/projects/10302>), such as 1.1.1.1 and 1.1.1.3. Please in the proposal clearly identify potential overlaps with the UNEP and other projects (i.e. components 1 and 3 of the UNEP project), and establish an action plan for collaboration between the two projects to avoid duplication.

Agency Response

**GEF Sec. Comment:** *At CEO Endorsement stage, the focus of the project has been changed from a business model based on battery charging to a one based on battery swap. Please elaborate further on the rationale for this change, particularly given that the battery swap business model hasn't yet been tested globally and overall has proved to be less successful than the battery charging model. Also, there seems to be a project in Jacqueville which is also testing battery swap business model. Please reflect on the challenges and lessons learned from this project, and how these could be integrated into this project. Similarly, there was an unsuccessful e-bike pilot implementing by OIPR which used a battery swap model. The proposal shall elaborate further on the challenges faced by the e-bike pilot and build on these lessons learned for the proposed project.*

Please see clarifications provided to question 8 above.

We would like to highlight that the project is not opting for only one technology for the business model but will apply the most suitable one based on the feasibility studies that will be developed during the implementation phase under Component 2.

**The pilot project in Jacquville** is more a demonstration of the use of solar generation and should not be confused with the demonstration of battery swap technology. There are many issues with on-board solar generation for on-road e-mobility, and the Jacquville project seems to be demonstrating these.

The project of OIPR in the R?serve Naturel Dahlia Fleur was initially successful but had to be abandoned due to the early discharge of the batteries because of humidity and lack of spare parts. The lessons learned from this initiative in terms of design (the brake was used as an accelerator whereas in the cultural concept, the brake is used for braking), the ergonomics of the bike, the range of battery charges, battery swap strategy, solar panel, mini-grid etc., will be integrated during the project implementation phase. The OIPR is an important partner of the project and will play a key role in deploying e-bikes in the Banco Park and R?serve Naturel Dahlia Fleur as well as in the INPHB campus in Yamoussoukro. They will also support the feasibility studies (data collection, consultations, etc.) for these specific sites.

Moreover, we would like to emphasize that the combination of modern battery technologies, and cheap communications and electronics, has introduced battery swapping to small-format electric vehicles such as two- and three-wheelers. Providing example of this change, there are now more battery swap stations in Taiwan than there are petrol stations. At face value, there are many benefits for battery swapping, especially in environments where the target users are not so familiar with new technologies. These benefits include removing the concern about the cost and durability of the modern battery from an uninformed purchaser and giving this responsibility to an agency that has particular expertise in the operation and maintenance of modern battery systems. This not only removes significant barriers for a potential purchaser (the barrier of unknown performance and unknown durability, and these risks are often too great to surmount. The removal of the upfront cost of the battery and switch to a pay-as-you-go battery service model is also normally more affordable where the vehicles involved have high utilisation), it is also expected to return far longer services lives for the batteries, and assign one agency to the responsibility of end-of-life management of the batteries (also noting that having when agency looking after mini batteries provides many more opportunities for refurbishment, repurposing and reuse of batteries).

It is behind the face value that the benefits of battery swapping really show. Rather than a single dimensional project, such as providing two-wheel mobility, **battery swapping enables multidimensional projects that integrate e-mobility with electricity supply**. For example, the battery swap stations (where multiple batteries are charged at one time) can be operated as virtual power stations with the charging rate used increased or decreased according to the available power in the local network, or even export electricity from the batteries to the local network to maintain voltages in the grid, etc., and this done in concert with intermittent electricity supplies such as those that you get from renewable energy generation. **In short, a battery swapping stations so deployed can support the local grid network, including supporting a higher proportion of renewable energy on that local network than would otherwise be possible.**

The battery swapping business model compensates the high-cost component of the electric battery compared to the vehicle price. Charging times are also reduced by a substantial amount. In addition, due to controlled charging conditions, batteries last for longer charging cycles. Swapping requires a compatible interface between the vehicle and swapping station. The battery swapping provider has a contract with the customer, which contains the automated swapping of discharged to charged batteries for the electric vehicle. The swapping provider follows his/her own optimized charging strategies. Whereas, the customer possesses a battery for a temporary period.

The flexibility of battery swapping is also expanding: there are many new models of battery swap capable two- and three-wheeled electric vehicle in India, for example. Battery swapping has also long been used for last mile electricity distribution but normally using lead acid batteries. The availability of a battery swap station will enable access to modern battery technologies for household electricity distribution, and open up other opportunities as well, enabling a far wider electrification of the local community than just vehicles.

**GEF Sec. Comment:** *Please clarify if the pilot in Abidjan is also planning to use a battery swap model given that it would focus on LEV instead of 2-3 wheelers, and that a battery swap model presents more challenges in bigger cities.*

The pilot demonstration project in Abidjan will NOT have battery swapping model since it will focus on LEV instead of 2&3 wheelers.

**GEF Sec. Comment:** *Some of the outcomes seem to overlap with the UNEP project (national child project GEF ID10302 Integrated, Sustainable and Low Emissions Transport in Cote d'Ivoire - <https://www.thegef.org/projects-operations/projects/10302>), such as 1.1.1.1 and 1.1.1.3. Please in the proposal clearly identify potential overlaps with the UNEP and other projects (i.e. components 1 and 3 of the UNEP project), and establish an action plan for collaboration between the two projects to avoid duplication.*

During the PPG phase, the project team collaborated with UNEP to align the objectives and streamline the interventions of the two projects. One of the main differences of the projects is that this GEF/UNIDO project is focusing on peri-urban and rural areas within the target cities by providing sustainable transport solutions such as small format e-vehicles (electric 2&3 wheelers) supporting the economic activities (such as of the farmers and fish producers etc.). The GEF/UNEP project does not support electric 2&3 wheelers. In addition, it only focuses on Abidjan.

While the GEF/UNEP project is focusing on the broader e-mobility framework at the national level, this GEF/UNIDO project focuses more on the introduction of 2&3 electric wheelers in the target areas. The UNIDO project will benefit from Component 3 of the GEF/UNEP project i.e. "the Government of C?te d'Ivoire adopts financial incentives and technical standards to promote investments in low-carbon electric mobility in public transport?". The project will be complementary and closely linked to the GEF/UNEP project.

Moreover, the activities 1.1.1.1 and 1.1.1.3, under Output 1.1.1, will promote public-private-partnerships and an engagement framework with the private sector ensuring that mechanisms are available to support inclusive multi-stakeholder initiatives and working with other development organizations (such as UNEP) to harmonize efforts and realize development results. The technical committee that will be established under the project will work closely with the national inter-sectoral e-mobility coordination body established under the UNEP project. This has been agreed during the bilateral meetings with the project coordinator of the UNEP project in Cote d'Ivoire.

**4. Is there further elaboration on how the project is aligned with focal area/impact program strategies?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.

**5. Is the incremental reasoning, contribution from the baseline, and co-financing clearly elaborated?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.

**6. Is there further and better elaboration on the project's expected contribution to global environmental benefits or adaptation benefits?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.

**7. Is there further and better elaboration to show that the project is innovative and sustainable including the potential for scaling up?**

Secretariat Comment at CEO Endorsement Request



3/29/2023 PM:

Yes.

Agency Response done.  
Project Map and Coordinates

**Is there an accurate and confirmed geo-referenced information where the project intervention will take place?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

Yes.

Agency Response Done.  
Child Project

**If this is a child project, is there an adequate reflection of how it contributes to the overall program impact?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

N/A.

Agency Response done.  
Stakeholders

**Does the project include detailed report on stakeholders engaged during the design phase? Is there an adequate stakeholder engagement plan or equivalent documentation for the implementation phase, with information on Stakeholders who will be engaged, the means of engagement, and dissemination of information?**

Secretariat Comment at CEO Endorsement Request  
7/28/2023 PM:

**Cleared.**

**3/29/2023 PM:**

**Yes, with suggestions.** Please clarify if indigenous peoples are present in the pilot areas already identified at PPG stage. If yes, please explain how their participation and active engagement would be ensured. Also, please include the program manager for the UNEP project in the list of stakeholder identified and consulted.

Agency Response

The indigenous people are NOT present in the pilot areas identified at PPG stage.

As suggested, we included the program manager for the UNEP project in the list of stakeholder identified and to be consulted during project execution.

**Gender Equality and Women's Empowerment**

**Has the gender analysis been completed? Did the gender analysis identify any gender differences, gaps or opportunities linked to project/program objectives and activities? If so, does the project/program include gender-responsive activities, gender-sensitive indicators and expected results?**

Secretariat Comment at CEO Endorsement Request

**7/28/2023 PM:**

**Cleared.**

**3/29/2023 PM:**

**No.** At PIF stage it was agreed that the CEO Endorsement document will assign gender markers at the output level. Please add these markers to the CEO Endorsement document. Please see also comment above on Core Indicator 11.

Agency Response

Noted with thanks. Logframe includes gender markers.

**Private Sector Engagement**

**If there is a private sector engagement, is there an elaboration of its role as a financier and/or as a stakeholder?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.  
**Risks to Achieving Project Objectives**

**Has the project elaborated on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved? Were there proposed measures that address these risks at the time of project implementation?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.  
**Coordination**

**Is the institutional arrangement for project implementation fully described? Is there an elaboration on possible coordination with relevant GEF-financed projects and other bilateral/multilateral initiatives in the project area?**

Secretariat Comment at CEO Endorsement Request  
11/2/2023 PM:

**Cleared.** UNIDO will execute some administrative and technical activities. The request for execution support was submitted by UNIDO and approved by GEF management on November 1, 2023.

7/28/2023 PM:

**No.** UNIDO provided a justification for the request for execution support services for this project. However, this justification mentioned the total GEF funding to be executed by

UNIDO is US300k. However, this amount does not match the figures in the official letter (i.e. US60k + 190K). Grateful if you can please clarify this inconsistency and provide us with an updated letter as need be.

**3/29/2023 PM:**

**No.** Please address the following comments:

- The graph is off the margins, please amend.
- The Agency has attached a letter requesting execution support services to be provided by UNIDO. However, as per GEF Guidelines *Before obtaining the GEF OFP's letter of support, the Agency should contact the Secretariat to explore the feasibility of such request?*. The GEF Sec has reached out to the Agency asking for a formal email with this request, including a more detailed justification on why this execution support is needed and the total estimated budget for the support to be provided.

Agency Response

***UNIDO Response October 2023:***

We confirm that the figures in the official letter from the OFP and the total UNIDO budget (300k) are both correct. The reason behind the inconsistency that the letter does not mention to the budget for project mid-term review and terminal evaluation (50k) since it typically stays with the implementing agency. The breakdown of UNIDO budget is provided below:

Summary of UNIDO budget

USD 250,000	Limited execution support (60,000 USD from PMC and 190,000 from components for TA support) as stated in the OFP letter
USD 5 0,000	for project mid-term review and terminal evaluation (not stated in the letter)
<b>USD 300,000</b>	<b>Total UNIDO budget</b>

The graph is adjusted as suggested.

Noted with thanks on the execution support letter.

**Consistency with National Priorities**

**Has the project described the alignment of the project with identified national strategies and plans or reports and assessments under the relevant conventions?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.  
**Knowledge Management**

**Is the proposed Knowledge Management Approach for the project adequately elaborated with a timeline and a set of deliverables?**

Secretariat Comment at CEO Endorsement Request  
7/28/2023 PM:

**Cleared.**

3/29/2023 PM:

**No.** Please address the following comments:

- The knowledge management section is repeated. Please amend.
- The proposed business model for the project has been changed from a battery charging to a battery swap model. Given that the battery swap business model hasn't been tested globally and there are a few unsuccessful cases of battery swap pilots, please consider including a project deliverable focus on assessing the results of the project, successes and challenges in the implementation of the battery swap business model in Cote d'Ivoire, and recommendations for potential future projects.
- While the project document mentions intention to undertake various KM and communications activities throughout, especially in Components 2 and 3, the KM Approach of the project has not been adequately elaborated. The KM section lists general statements and aspirations rather than specific activities or proposed deliverables. While the project budget includes costs of trainings and workshops which are likely associated with KM deliverables, there is no clear budget provided for KM and communications activities. Please better

elaborate the KM section and tie the project's KM approach to the KM and communications activities (trainings, workshops, exchanges, guidelines, platform, etc.) that are proposed in Components 2 and 3. This section should also describe concrete plans for communications/dissemination, explaining proposed modalities for dissemination, etc. The agency should also clarify the budget allocated to key KM and communications related activities as well as the timeline for their implementation. This can be done by including a simple budget table in the KM section and also, providing a timeline for key KM and communications deliverables on that table.

#### Agency Response

**GEF Sec. Comment:** The knowledge management section is repeated. Please amend.

Amended. Thanks.

**GEF Sec. Comment:** The proposed business model for the project has been changed from a battery charging to a battery swap model. Given that the battery swap business model hasn't been tested globally and there are a few unsuccessful cases of battery swap pilots, please consider including a project deliverable focus on assessing the results of the project, successes and challenges in the implementation of the battery swap business model in Cote d'Ivoire, and recommendations for potential future projects.

The project is not opting for only one technology for the business model but will apply the most suitable one based on the feasibility studies that will be developed during the implementation phase under Component 2.

Under Output: 2.1.1, six pre-feasibility studies for integrated e-mobility technology demonstration projects will be developed. An assessment will be carried out and will provide an overview of the different charging solutions (smart cable charging technology vs. battery swapping) including operating environment considerations and business models developed; overview of financing options for Light Electric Vehicles (LEVs), e-bikes, e2Ws and e3Ws including best practices, and taxation instruments developed, etc.

There are many lessons to be learned from existing battery swap projects around the globe. The flexibility of battery swapping is also expanding: there are many new models of battery swap capable two- and three-wheeled electric vehicle in India, for example. Battery swapping has become established and has proved to be commercially attractive in Taiwan, Indonesia, and Cambodia to name the countries with the most prolific battery swap programmes already in place. Battery swapping has also long been used for last mile electricity distribution generally using lead acid batteries.

Please see further clarifications provided to question 8 above on this topic.

**GEF Sec. Comment:** While the project document mentions intention to undertake various KM and communications activities throughout, especially in Components 2 and 3, the KM

Approach of the project has not been adequately elaborated. The KM section lists general statements and aspirations rather than specific activities or proposed deliverables. While the project budget includes costs of trainings and workshops which are likely associated with KM deliverables, there is no clear budget provided for KM and communications activities. Please better elaborate the KM section and tie the project's KM approach to the KM and communications activities (trainings, workshops, exchanges, guidelines, platform, etc.) that are proposed in Components 2 and 3. This section should also describe concrete plans for communications/dissemination, explaining proposed modalities for dissemination, etc. The agency should also clarify the budget allocated to key KM and communications related activities as well as the timeline for their implementation. This can be done by including a simple budget table in the KM section and also, providing a timeline for key KM and communications deliverables on that table.

UNIDO acknowledges that information exchange and KM are a substantial part of the project. The project will apply for its knowledge management several tools, which are partially integrated in the activities and deliverables of the project components. The KM tools and products are based on experiences and best-practices approaches of UNIDO.

Internal knowledge management will be undertaken through coordination calls and meetings between the Ministry of Transport, PMU and the technical committee, COPADEN, A3E, INP-HB, ECREEE, annual meetings of the Steering Committee, etc. The PMU will develop a methodological approach to track activities, knowledge developed, and the impacts of its work. The results from the pilot projects will inform fact sheets and the lesson learned material.

UNIDO and partners will support through the participation on awareness raising activities, training sessions and will provide guidance on the development of the database and knowledge products.

The results of the pilot activities will be captured in knowledge product, e.g., fact sheets (see Deliverables for Output 2.1.2 ? Activity 2.1.2.2). The fact sheets will present the lessons learnt and main technical, environmental and economic characteristics. The sheets will be informed by project documentation (e.g. feasibility studies) summarizing the results in terms of e-mobility performance, GHG mitigation and sustainable development impact, if available in the initial phase already.

The knowledge products will focus on sharing information and results of the project and on low-carbon infrastructure solutions to relevant stakeholders and the public. This will be done as described through training sessions, workshops and multi-stakeholder meetings tailored to the needs of each stakeholder (local governments, project developers, investors and operators).

The KM strategy will have the following components:

- ? Overview of existing lessons and best practices
- ? Plans to learn from relevant projects, programs, initiatives and evaluations
- ? Capture, assess and document information, lessons, best practice & expertise generated during the project implementation

- ? Tools and methods for knowledge exchange, learning & collaboration
- ? Strategic communications

All training materials, knowledge management training materials, knowledge management activities will be gender mainstreamed. This includes integration of gender dimensions into publications, for instance presenting sex-disaggregated data, gender sensitive language in publications, photos showing both women and men, and avoid presenting stereotypes, as well as assuring that women, men and the youth have access to and benefit from the knowledge created.

**Environmental and Social Safeguard (ESS)**

**Are environmental and social risks, impacts and management measures adequately documented at this stage and consistent with requirements set out in SD/PL/03?**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

**Yes.**

Agency Response Done.  
**Monitoring and Evaluation**

**Does the project include a budgeted M&E Plan that monitors and measures results with indicators and targets?**

Secretariat Comment at CEO Endorsement Request  
7/28/2023 PM:

**Cleared.**

3/29/2023 PM:

**Yes, with suggestions.** The M&E table is off-margins, please amend.

Agency Response The M&E table is adjusted.  
**Benefits**



**Are the socioeconomic benefits at the national and local levels sufficiently described resulting from the project? Is there an elaboration on how these benefits translate in supporting the achievement of GEBs or adaptation benefits?**

Secretariat Comment at CEO Endorsement Request  
**3/29/2023 PM:**

**Yes.**

Agency Response Done.  
**Annexes**

**Are all the required annexes attached and adequately responded to?**

Secretariat Comment at CEO Endorsement Request  
**10/26/2023 PM:**

**Cleared.**

**7/28/2023 PM:**

**No.** The following comments are still pending:

- The table does not use the GEF budget template (<https://www.thegef.org/documents/gef-project-budget-template>), instead it provides the budget disaggregated by year. Please present one consolidated budget to facilitate the reading and understanding, consistently with the budget template as per the the GEF guidelines.

- In the budget only one category "Contractual Services" has been identified. Please disaggregate by expenditure categories as defined in Appendix A of the "GEF Project and Program Cycle Guidelines" (i.e. training, office supplies, travel, salary, local consultants, international consultants, etc.) - [https://www.thegef.org/sites/default/files/council-meeting-documents/EN\\_GEF\\_C.59\\_Inf.03\\_Guidelines%20on%20the%20Project%20and%20Program%20Cycle%20Policy.pdf](https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF_C.59_Inf.03_Guidelines%20on%20the%20Project%20and%20Program%20Cycle%20Policy.pdf)

**3/29/2023 PM:**

**No.** Please address the following comments on Annex E Project Budget Table:

- The table is off-margins, please amend.
- The table does not use the GEF budget template (<https://www.thegef.org/documents/gef-project-budget-template>), instead it provides the budget disaggregated by year. Please present one consolidated budget to facilitate the reading and understanding, consistently with the budget template as per the GEF guidelines.
- In the budget only one category "Contractual Services" has been identified. Please clarify and add categories accordingly (i.e. training, office supplies, travel, salary, local consultants, international consultants, etc.). Also, for "Contractual Services", please clarify whether this is "Individual" or "Company".
- UNIDO budget for direct execution support is subject to management approval once the formal request is sent to the GEF.

Agency Response

***UNIDO Response October 2023:***

The budget table is updated as per GEF Budget template and more breakdown of budget expenditures. Please find attached the updated budget.

***GEF Sec. Comment:*** The table is off-margins, please amend.

Amendments reflected.

***GEF Sec. Comment:*** The table does not use the GEF budget template (<https://www.thegef.org/documents/gef-project-budget-template>), instead it provides the budget disaggregated by year. Please present one consolidated budget to facilitate the reading and understanding, consistently with the budget template as per the GEF guidelines.

? In the budget only one category "Contractual Services" has been identified. Please clarify and add categories accordingly (i.e. training, office supplies, travel, salary, local consultants, international consultants, etc.). Also, for "Contractual Services", please clarify whether this is "Individual" or "Company".

Please note that all the ?Contractual Services? refers to company.

***GEF Sec. Comment:*** UNIDO budget for direct execution support is subject to management approval once the formal request is sent to the GEF.

Noted with thanks.

**Project Results Framework**

Secretariat Comment at CEO Endorsement Request

**11/2/2023 PM:**

**Cleared.**

**7/28/2023 PM:**

**No.** Please clarify in parenthesis that GHG mitigated correspond to GEF Core Indicator #6 and beneficiaries correspond to Core Indicator #11.

**3/29/2023 PM:**

**Yes, with comments.** The project Results Framework under Annex A is off margins, please amend. Also make sure the Results Framework includes a reference to the GEF Core Indicators applicable to this project, i.e. in this case Core Indicators # 6 and #11. It's mandatory at CEO endorsement to include all core indicators target in the results framework.

Agency Response

***UNIDO Response October 2023:***

**References to the GEF Core Indicators are added.**

Annex A is now within the margins. Core Indicators # 6 and #11 are included in the Annex A.

**GEF Secretariat comments**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

Previous GEF Sec comments have been addressed.

Agency Response Done.

**Council comments**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

N/A.

Agency Response Done.

**STAP comments**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

N/A.

Agency Response Done.

**Convention Secretariat comments**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

N/A.

Agency Response Done.

**Other Agencies comments**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

N/A.

Agency Response Done.

**CSOs comments**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

N/A.

Agency Response Done.

**Status of PPG utilization**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

Yes.

Agency Response Done.

**Project maps and coordinates**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

Yes.

Agency Response Done.

**Does the termsheet in Annex F provide finalized financial terms and conditions? Does the termsheet and financial structure address concerns raised at PIF stage and that were pending to be resolved ahead of CEO endorsement? (For NGI Only)**

Secretariat Comment at CEO Endorsement Request

**3/29/2023 PM:**

N/A.

Agency Response

Done.

**Do the Reflow Table Annex G and the Trustee Excel Sheet for reflows provide accurate reflow expectations of the project submitted? Assumptions for Reflows can be submitted to explain expected reflows. (For NGI Only)**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

N/A.

Agency Response Done.

**Did the agency Annex H provided with information to assess the Agency Capacity to generate and manage reflows? (For NGI Only)**

Secretariat Comment at CEO Endorsement Request  
3/29/2023 PM:

N/A.

Agency Response Done.

**GEFSEC DECISION**

**RECOMMENDATION**


**Is CEO endorsement recommended? (applies only to projects and child projects)**



Secretariat Comment at CEO Endorsement Request  
11/8/2023 PM:

**Cleared.**

**11/6/2023 PM:**

**No.** Since UNIDO's request for dual executing function has been approved by the GEF, please add UNIDO under Executing Partner Name in the information section.

**Part I: Project Information** 

<b>GEF ID</b> 11042		<b>Project Type</b> MSP
<b>Type of Trust Fund</b> GET	<b>CBIT/NGI</b> CBIT No      NGI No	<b>Project Title</b> ⓘ Integration of electric mobility with renewable energy in peri-urban and rural areas around cities in Côte d'Ivoire
<b>Countries</b> Cote d'Ivoire		<b>Agency(ies)</b> UNIDO
<b>Other Executing Partner(s)</b> ⓘ Ministry of Transport (MoT) 		<b>Executing Partner Type</b> Government 
<b>GEF Focal Area</b> ⓘ Climate Change		<b>Sector</b> ⓘ Technology Transfer/Innovative Low-Carbon Technologies

7/28/2023 PM:

No. Please address pending comments above.

3/29/2023 PM:

No. Please address comments above.

**Review Dates**

	<b>Secretariat Comment at CEO Endorsement</b>	<b>Response to Secretariat comments</b>
<b>First Review</b>		
<b>Additional Review (as necessary)</b>		
<b>Additional Review (as necessary)</b>		

**Secretariat Comment at  
CEO Endorsement**

**Response to  
Secretariat comments**

<b>Additional Review (as necessary)</b>
<b>Additional Review (as necessary)</b>

**CEO Recommendation**

**Brief reasoning for CEO Recommendations**