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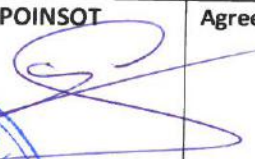

Project title: Renewable Energy for the City of Marrakech's Bus Rapid Transit System		
Country: Morocco	Implementing Partner: Delegate Ministry in Charge of Environment	Management Arrangements : National Implementation Modality (NIM)
UNDAF 2012-2016/Country Programme Outcome: Outcome 5: The principles of the "National Charter for the Environment for Sustainable Development" are implemented in coherence between sectoral strategies and priorities for the environment, climate change adaptation and risk management and by strengthening territorial convergence in areas and the most vulnerable populations with special attention to gender		
UNDAF 2017-2021/Country Programme Outcome: Outcome 2: Public policies and national strategies related to industrial development, environment and spatial planning incorporate the principles of inclusive and sustainable economic growth and development.		
UNDP Strategic Plan Output: Output 1.5: Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access (especially off-grid sources of renewable energy)		
UNDP Social and Environmental Screening Category: Medium risk	UNDP Gender Marker: 1	
Atlas Project ID/Award ID number: 00097409	Atlas Output ID/Project ID number: 00101152	
UNDP-GEF PIMS ID number: 5890	GEF ID number: 9567	
Planned start date: September 2016	Planned end date: August 2018	
LPAC date: 06 September 2016		
Brief project description: <p>The objective of the project is to support the low-carbon integration of the Bus Rapid Transit (BRT) System under implementation by the City of Marrakech through the installation of 1 MW solar farm based on High Concentration PhotoVoltaics (HCPV) technology. The energy produced by the farm will help power electric buses to showcase an integrated low-carbon transport system that can be replicated in other cities in</p>		

Morocco. An integrated approach is sought throughout the project duration combining various types of activities, such as capacity building, awareness and improvement of governance. Important sustainable development changes are expected not only at the level of the urban transport sector but also in other aspects such as improvement of air quality, energy efficiency, enhancing social inclusion in the suburbs, improving the quality of life, guaranteeing security, creating job opportunities, improving touristic attractiveness of the City, etc.

FINANCING PLAN

GEF Trust Fund or LDCF or SCCF or other vertical fund	USD 1,369,863 ¹
UNDP TRAC resources	USD
Cash co-financing to be administered by UNDP	USD
(1) Total Budget administered by UNDP	USD 1,369,863
PARALLEL CO-FINANCING (all other co-financing that is not cash co-financing administered by UNDP)	
UNDP	USD
Government	USD 56,173,683
(2) Total co-financing	USD 56,173,683
(3) Grand-Total Project Financing (1)+(2)	USD 57,543,546

SIGNATURES

Signature: Madame Hakima EL HAITE  La Ministre déléguée auprès du Ministre de l'Energie des Mines de l'Eau et de l'Environnement, Chargée de l'Environnement Hakima EL HAITE	Agreed by Implementing Partner Ministère délégué chargé de l'Environnement	Date/Month/Year:
Signature: Monsieur Philippe POINSOT  	Agreed by UNDP	Date/Month/Year: 4/10/16

¹ Including GEF PPG Grant: USD 50,000

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ACRONYMS

ADEREE	National agency for the development of the renewable energy and energy efficiency
AIDS	Acquired Immune Deficiency Syndrome
AWP	Annual Work Plan
BRT	Bus Rapid Transit
COP	Conference of Parties
COSs	Civil Society Organizations
DCD	Deputy Country Director
DGCL	General direction of local authorities
DRR	Deputy Resident Representative
ERC	Evaluation Resource Centre
ESIA	Environmental and Social Impact Assessment
FART	Fonds d'Accompagnement des Réformes du Transport routier urbain et interurbain = Fund for support of reforms in urban and interurban road transport
GEF	Global Environment Facility
GHG	GreenHouse Gases
HCPV	High Concentrated Photovoltaic
HIV	Human Immunodeficiency Virus
IEO	Independent Evaluation Office
ILO	International Labour Office
IRRF	Integrated Results and Resources Framework
IT	Information technology
KM	Knowledge Management
LPAC	Local Project Appraisal Committee
MAEC	Ministry of foreign affairs and cooperation
MdE	Ministry of the Environment
MI	Ministry of Interior
M&E	Monitoring & Evaluation
NIM	National Implementation Modality
MRV	Monitoring Reporting & Verification
OFP	Operational Focal Point
PAC	Project Appraisal Committee
PIMS	Project Information Management System
PIR	Project Implementation Report
QA	Quality Assurance
RADEEMA	Marrakech autonomous water and electricity distribution board
RE	Renewable Energy
RTA	Regional Technical Advisor
R&D	Research & Development
SDAU	<i>Schéma Directeur d'Aménagement et d'Urbanisme</i> = Master Plan for Urban Planning and Development

SBAA	Standard Basic Assistance Agreement
SIE	Energy Investment Company
SESA	Strategic Environmental and Social Assessment
SESP	Social and Environmental Screening Procedure
SSTrC	South-South and Triangular Cooperation
TE	Terminal Evaluation
TLDC	Transport Local Development Company
TRAC	Target for Resource Assignment from the Core
UNDAF	UN System's Development Assistance Framework
UNDG	United Nations Development Group
UNDP	United Nations Development Programme
UNDP CO	UNDP Country Office
UNDP POPP	UNDP Programme and Operations Policies and Procedures
UTP	Urban Transport Plan
TLDC	Local Development Company dedicated to the urban transport sector
RR	Resident Representative

I. DEVELOPMENT CHALLENGE

Sustainable development has constantly been a priority for Morocco, who aspires to reach a low carbon and a climate change resilient development. In line with this objective, the country launched a number of strategies and plans in order to achieve the transition of all major economic sectors. The transport sector is one of the targeted sectors given its high level of energy consumption and greenhouse gases (GHG) emissions. Including all modes (e.g., freight transport, urban transport, suburban transport, etc.), the transport sector consumes 38% of the national energy use², emits 14 813 300 tCO₂eq which represents 14.7% of the national GHG emissions³, contributes to 5% of the national GDP and 9% of the value-added of the tertiary sector⁴.

To line-up with the National Strategy for Sustainable Development⁵, mainly to the strategic pillar 8 “Promoting sustainable mobility”, the City of Marrakech has been planning an upgrade of its urban transport system in order to meet the needs of the growing local population and tourist visitors. According to the 2014 national census, Marrakech prefecture’s population was estimated at 1 330 468. On another hand, Marrakech as the first Moroccan touristic destination receives a high flow of tourists. For instance, in 2013, the tourist night-stays reached 6 513 577⁶.

Due to the low level of service, the utilization rate of the actual bus transport system of the City of Marrakech is less than 5% as compared to other transportation modes (e.g., taxis, private vehicles, etc.). Due to national and local contexts, Marrakech has shown its will to improve the public urban transport system, given its importance as one of the main components of social commodities. Such improvement is expected to support the city’s ongoing economic growth, mainly that witnessed with respect to the tourism sector.

To that end, the City has launched a study in 2008 to upgrade its Urban Transport Plan (UTP) to respond to the above-mentioned issues but also to contribute to the national sustainable development and GHG emissions mitigation objectives. The UTP supports also the territorial planning initiatives launched within the framework of the Town Planning and Development Plan⁷ who has a strong environmental protection component.

One of the challenges that the UTP has to take into account is the growing urbanization of the City of Marrakech and development of new suburbs inhabited mainly by middle and poor classes. For example, the new districts of *M’hamid* and *Massira* are currently witnessing the planning and construction of many urban projects. With a potential increase on public transport demand, the actual transport means need to be improved in order to meet the community needs and ensure social inclusion.

In Marrakech, the public transport system displays some weaknesses such as: i) a very low bus frequency, ii) uncertain bus-stops location, iii) a modest comfort level, etc. In addition to that, the City of Marrakech is characterized by a high motorization rate⁸, especially for the two-wheelers⁹. The competition brought up by taxicabs is also an issue that justifies the low utilization rate of public buses.

² Kingdom of Morocco (2016) : Third National Communication to the UNFCCC

³ Kingdom of Morocco (2016) : First Biennial Up-date Report (BUR)

⁴ National Strategy for Sustainable Development 2015 – 2030: Final report August 2014

⁵ National Strategy for Sustainable Development 2015 – 2030: Final report August 2014 – Presented at the 8th Session of the National Environmental Council held on the 19th of July, 2016

⁶ Moroccan Tourism Observatory: Tourism statistics of December 2013 regarding number of tourist-stays in classified lodging establishments.

⁷ SDAU : *Schéma Directeur d’Aménagement et d’Urbanisme*

⁸ In Marrakech, the motorization rate is 120 cars for 1.000 people, whereas in Casablanca and Tangier (with higher populations) it is estimated at 100 and 27 vehicles per 1000 people, respectively (source: *Ministère de l’Intérieur, Wilaya de la Région de Marrakech-Tensift-Al Haouz, Préfecture de Marrakech (2009) : Plan de déplacements urbains de la ville de Marrakech, Mission 3, Elaboration du diagnostic*)

⁹ 170 vehicles per 1.000 people (source: *Ministère de l’Intérieur, Wilaya de la Région de Marrakech-Tensift-Al Haouz, Préfecture de Marrakech (2009) : Plan de déplacements urbains de la ville de Marrakech, Mission 3, Elaboration du diagnostic*)

To tackle the urban transport deficiencies, the City of Marrakech's Council decided to integrate a Bus Rapid Transit (BRT) system as the appropriate solution. In a first phase¹⁰, two lines (M'hamid and Massira) to be connected in downtown are expected to start by end of 2016 (see Figures 1 and 2). So far, 90% of the dedicated infrastructures has been achieved for a total spent budget of about 35 million USD.

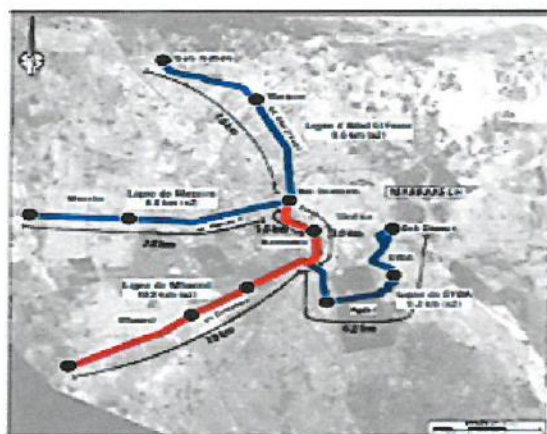


Figure 1: BRT M'Hamid Line (L1)

Characteristics :

- Length : 10,9 km
- Estimated number of passengers : 36.000 per day
- 15 stations among which 8 connected with serving normal bus lines

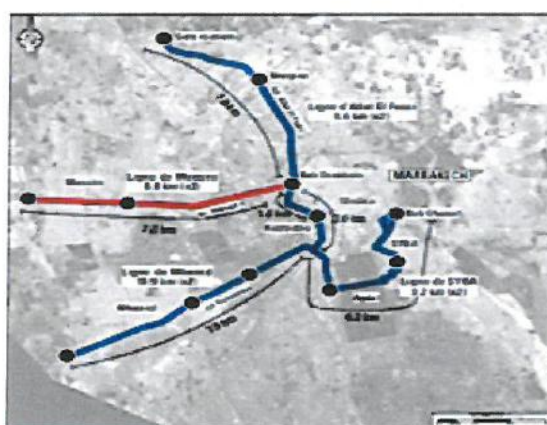


Figure 2: BRT Massira Line (L2)

Characteristics :

- Length : 8,8 km
- Estimated number of passengers : 35.000 per day
- 15 stations among which 8 connected with serving normal bus lines

In line with COP22 engagements, the City Council also decided to introduce electrical buses supplied by solar energy in the BRT system instead of normal diesel buses to reduce GHG and air pollutant emissions. The actual 121 diesel buses generated in 2015 about 11 088 tons of CO₂ (see Annex A). A first line of the BRT is scheduled to be inaugurated before COP 22 with 15 electric buses. To procure this first set of electrical buses, the City of Marrakech will mobilize an additional financing of about 21 million USD.

To mobilize the necessary financial resources and ensure high quality management of the future BRT system, the City Council decided on the 5th of March 2016 to create a dedicated entity, the Transport Local Development Company (TLDC¹¹). The TLDC is now being established as a parastatal legal entity with more than 50% of the capital shares allocated to the City of Marrakech (the largest shareholder) and almost 30% to the Council of Marrakech-Safi Region as the sub-national governing body. A formal request was sent on the 18th of March 2016 by the City of Marrakech to the Minister of Interior to obtain the necessary financial resources for the procurement of electrical buses from a dedicated national transport fund (FART: *Fonds d'Accompagnement des Réformes du Transport routier urbain et interurbain*¹²). The plan is for the procured electric buses to be owned by the TLDC and operated by a designated private bus system operator already contracted by the City (ALSA¹³).

To further the low carbon transformation of the BRT system, the City of Marrakech is now considering the installation of a Solar Photovoltaic (PV) farm in order to (partially) power the electrical buses. The Energy Investment Company (SIE¹⁴), a State-owned entity, is already providing technical assistance to the City of

¹⁰ Engineering studies of two additional lines (L3 and L4) representing the 2nd phase of the BRT system are underway

¹¹ According to the Municipal Charter, municipalities are allowed to develop Local Development Companies (LDC) as Public-Private-Partnerships to improve the quality of their services. So far, more than 20 LDC are operational in and many cities of Morocco are relying on to this type structures to manage public service such as transport (e.g., Tramways of Casablanca and Rabat), parking (e.g., Avilmar in Marrakech), public lighting, etc.

¹² The Fund « FART » is co-managed by the Ministry of Transport and Ministry of Interior. The part managed by the Ministry of Interior concerns the renewal of urban transport modes (buses and taxis), whereas the part managed by the Ministry of Transport concerns the inter-urban transport modes. The FART has an annual budget of about 22 million USD for each ministry.

¹³ ALSA is a private company operating the current diesel bus system of Marrakech under a delegated management contract of public services

¹⁴ SIE (www.sie.ma) represents the financial arm of the State for the execution of the energy mix by 2020. SIE is entrusted with the

Marrakech in identifying a qualified manufacturer of electric buses to meet the required technical specifications, level of adaptability to the local climate, timely delivery before COP22, etc. A preliminary analysis was done and it was decided that High Concentration PV (HCPV) technology is the most appropriate technology for the farm given the excellent solar potential of Marrakech (3,000 hours/year of sunshine with an irradiation of more than 5 kWh/m²/day); the fact that it withstands high temperature effects; and the significant capacity factor of around 40%. According to the technical specifications of the electrical buses to be powered, SIE advised the installation of a 1 MW HCPV farm at an estimated upfront capital cost of approximately 1,700,000 USD and an annual estimated cost of operations & maintenance of 28,000 USD. The TLDC will eventually own the 1 MW HCPV solar farm and sign a contract with a private firm on a build-operate-transfer (BOT contract) basis to build the plant and cover operations & maintenance of the solar farm in the short and medium term (the date for the handover or the running of the plant to TLDC is TBD). The site where the solar farm will be located has been identified at the far end of line L2 (West of Marrakech) near an electrical sub-station (see Figures 3 and 4). The selected site belongs to the City of Marrakech and will also host the offices of the TLDC, a training center, and a maintenance center.



Figure 3 : Location where the HCPV solar farm will be implemented



Figure 4: Available land for the installation of HCPV panels

At present the financial resources of the municipality – the largest shareholder of the TLDC – are highly constrained by COP22-related preparatory works. In addition, the level of indebtedness of the city is relatively high; hence the reason why City officials want to avoid taking on an additional bank loan to finance the investment cost of the solar plant which would weigh on the City's balance sheet. The present project is intended to address this financial barrier (Barrier #1) through a partial financial contribution by the GEF for the procurement and installation of the HCPV solar farm that will ensure that the City of Marrakech has the first low-carbon BRT system in all of Morocco.

Financial constraints are not the only barrier. To secure this low carbon investment over the long-term, proper management arrangements are critical. The project will also address the City's lack of capacity and experience in managing such a low-carbon BRT system (Barrier #2). Through technical assistance activities, the project will support the City of Marrakech and the newly created TLDC by setting-up specific MRV tools and building capacities on best practices of energy management.

The City of Marrakech is planning an expansion of the BRT system (lines L3 and L4) in the short to medium-term to ensure that most of the outer areas of the city are serviced by the new transport mode. Although the related engineering studies of the additional BRT lines are on-going, the City still lacks a detailed financial plan to ensure

development of the medium voltage sector mainly via photovoltaics or energy efficiency. SIE provides support to municipalities for projects implementation in order to promote renewables and improve energy efficiency in many sectors.

that all the necessary financial resources for the expansion are mobilized and made available (Barrier #3). In this regard, the project is intending to support the TLDC in developing a sound financial plan for the funding of all future BRT lines. Such planning will build on the successful financial planning experience of the first lines (L1 and L2).

Finally, the public bus system of the City of Marrakech is characterized by a very low usage rate that does not exceed 5% as compared to other transport modes (taxis, motorcycles, etc.). For various reasons (lack of comfort, irregular schedules, low frequency, etc.), the population currently gravitates towards other means of transport, in particular taxis, motorcycles and individual cars. The current bus network also suffers from various weaknesses in terms of geographical coverage. Indeed, the peripheral areas (suburbs) of the City are presently served in only a limited way, despite the significant demographic density of these areas, presently constituting around 27% of the total population of Marrakech. It is also important to note that these areas are witnessing large urban development projects, which is inducing increased demand for adequate transportation options. To improve the level of ridership (Barrier #4), the project will provide support in the designing the most appropriate communication and awareness campaigns and products for the BRT system in line with the local context. The actual public awareness campaign will be implemented by City authorities based on products designed by the GEF project.

II. STRATEGY

The project aims at supporting the transition of the public urban transport of the City of Marrakech to an innovative low carbon BRT system powered from a 1 MW HCPV solar farm. Implementing the project's components will guarantee an important change not only at the level of the urban transport sector but also in other aspects. The main changes will concern:

- **The urban transport system:** integrating the BRT system will definitely improve efficiency. Using dedicated pathways and electrical buses will reduce the waiting time at bus stops, increase bus frequency, offer better comfort, create a flexible network that can adjust to future urban expansions of the City of Marrakech;
- **Improvement of energetic efficiency of Marrakech bus system:** The project will support the implementation of the HCPV solar farm to power electrical buses. Since diesel buses will only be used for short-distanced lines connecting to the BRT system, fossil fuel consumption will be reduced significantly. Diesel consumption will be also reduced from the implementation of eco-driving practices;
- **Management and technical capacities :** Since the project is more of a pilot case in Morocco, capacities will be built to better master energy efficiency in the urban transport sector and improve management and monitoring capabilities of the TLDC. This component will spur a change of institutional capacities that will guarantee a long term continuity of the BRT system and offer a great potential for its reproducibility in other cities.
- **Users:** Due to the lack of comfort and dysfunctions of the actual bus system (bus stops location, low bus frequency, etc.), users tend to choose other efficient transport means both in time and availability. In fact, taxicabs and two-wheelers are the most used transport means in Marrakech. However, the suburbs lack the service of taxicabs, which exacerbate social exclusion. Integrating the BRT system will guarantee a better comfort for passengers. Plus, it will undoubtedly meet the needs of people with low mobility and create connections with the currently unserved suburbs. Moreover, the new system will likely attract new customers and eventually the actual transport means will be less used. All these consequences will induce major social changes, such as enhancing social inclusion in the suburbs, improving the quality of life, guaranteeing security and creating job opportunities.
- **Improvement of tourist attractiveness:** The city of Marrakech is the first Moroccan tourist destination. It is characterized by its attractive climate, its special landscape, its historic center, cultural heritage, etc. Due to the numerous dysfunctions of the actual bus transport system, tourists prefer taxicabs for moving around the city. However, tourists do not fully appreciate the fact that drivers do not sometimes respect the applicable tariffs or being approached by informal transporters that are common in Marrakech. The integration of an efficient urban transport system will create a better comfort, enhance safety for tourists and contribute to the improvement of the city's tourist attractiveness as well.
- **Improvement of ambient air quality:** Marrakech is one of the most polluted cities of Morocco. Given the fact that it is not a highly industrial city, pollution is particularly due to emissions from transportation, including bus system. The city's fleet is characterized by a high consumption of fuels, ranging from 40 L per 100 km to 60 L per 100 km. Moreover, presently all the diesel buses connect at a hub station located near "Jamma Lafna" which generates significant air pollution at this high density tourist area due to emissions of air pollutants such as Particulate Matter (PM) and Nitrogen Dioxide (NO₂). In 2012, the annual mean value of Particulate Matter PM₁₀ and PM_{2.5} concentrations were calculated at 57.5 µg/m³ and 24 µg /m³¹⁵, respectively. Regarding NO₂, another air pollutant closely related to the diesel fuel transport engines, its annual mean concentration in 2013 was close to the regulatory norm of ambient air

¹⁵ http://www.who.int/phe/health_topics/outdoorair/databases/cities/en/

in Morocco, i.e. $50 \mu\text{g}/\text{m}^3$ ¹⁶. This pollution mostly affects vulnerable social groups, particularly the elderly and children. By integrating the electrical BRT system, fewer diesel buses will have to access the center of the city which will lead to an improvement of air quality. Air quality improvement will be ascertained by data from the air monitoring stations available in Marrakech.

Hosting COP22 in November 2016, the City Council launched many initiatives to highlight its sustainable development and green growth pathways such as the improvement of street lighting efficiency, landfill biogas valorization, implementation of thematic green gardens, etc. This project is part of a global engagement of the City of Marrakech in ensuring a sustainable transition of some sectors, like the urban transport characterized by a low efficiency, various dysfunctions, low adjustment to demand, etc. COP22 offers then an ideal and unique opportunity to initiate the project's activities and involve all stakeholders.

The project relies on integrating electrical buses in the BRT system and their powering from a HCPV 1 MW solar farm. The preparation for such integration has already been initiated through the Urban Transport Plan of the City of Marrakech. The BRT system will eventually rely on four lines, as shown in figure 4, with L1 and L2 to be operational by end of 2016.

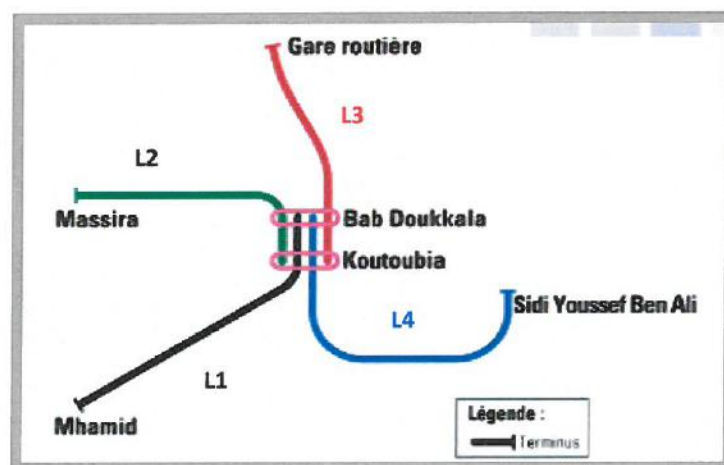


Figure 5: BRT lines expected in Marrakech

It is important to mention that the infrastructures of lines L1 and L2 are already achieved, and that the procurement of electrical buses is ongoing. These steps represent a solid base for the project's inception.

Improving the energy efficiency of urban transport in the City of Marrakech will rely not only on the integration of the BRT system, but also on improving the efficiency of diesel buses through eco-driving. The actual bus operator (ALSA) is planning to provide a first eco-driving training before COP22. However, to ensure a long term implementation of eco-driving, continuous training is needed.

A successful BRT system would have to attract more users in order to increase the utilization rate (presently less than 5%) with respect to other transportation modes (e.g., taxis, private vehicles, etc.). Specific awareness and communication activities would have to be designed and implemented by targeting the appropriate categories of the population, including women, students, residents in suburbs and tourists.

¹⁶ [National annual air quality report prepared by National Directorate of Meteorology for 2013](#)

Moreover, management, monitoring and reporting (MRV) activities related to the BRT system are vital elements to measure the efficiency improvement of the urban public transport. Implementation of such activities requires qualified human resources from the City of Marrakech and the TLDC. The capacity building activities planned by the project will eventually contribute to the improvement of knowledge and skills of main stakeholders.

Based on the actual dysfunctions and expected impacts a theory of change diagram expected through the project is presented hereafter:

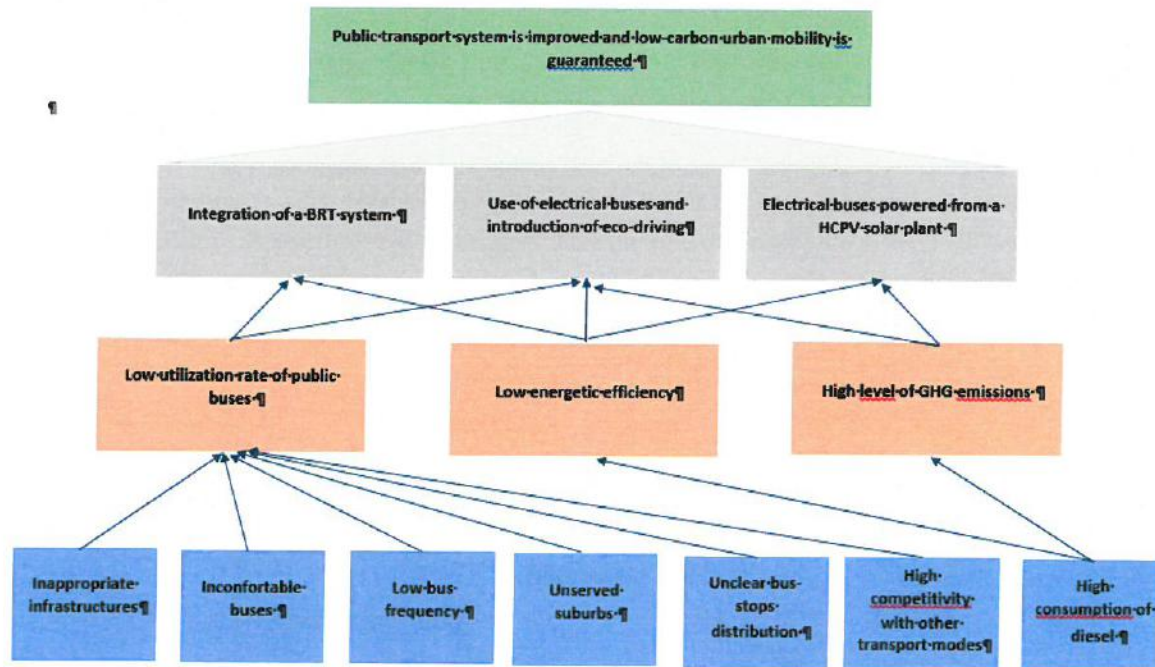


Figure 6: Theory of change expected through the project

III. RESULTS AND PARTNERSHIPS

i. Expected Results:

The objective of the project is to support the transition of the urban public transport of the City of Marrakech towards low-carbon sustainable mobility. The project will support the engaged efforts in the sector, specifically the integration of a BRT system, through the implementation of a HCPV solar farm to power electrical buses, continuous training of diesel bus drivers on eco-driving and building managerial and technical capacities. For Morocco, this represents a pilot project with a great potential of replication in other cities.

As mentioned in section II, the project will bring a considerable change in many ways. Integration of an electrical BRT system powered from a HCPV solar farm and implementation of eco-driving practices by diesel bus drivers will reduce GHG emissions by 27,327 tCO₂¹⁷ over the lifetime investment period (See Annex A for detailed calculation on direct and indirect GHG emissions reductions).

The introduction of electrical buses will reduce also the use of diesel buses, which will provide a real budget savings for the City of Marrakech. Based on the diesel consumption data provided by the City of Marrakech for the year 2015 and considering the introduction of 30 electrical buses to operate BRT lines L1 and L2 (15 buses during the first year of the project), the City of Marrakech will save (from their current fuel budget) an estimated \$2,221,172 at the end of the project (i.e; after 3 years) and \$28,875,233 after 15 years as the lifetime of the electrical buses. More details on these calculations, data and assumptions are provided in Annexe B.

These budgetary savings can be considered as a minimum since more savings will be provided by the introduction of electrical buses in the future lines L3 and L4 and also by the consistency of eco-driving practices with at least a 10% saving on diesel consumption. Calculations of these extra savings will be reviewed during the project implementation.

Moreover, the introduction of solar energy to power the BRT electrical buses will have a significant impact on the percentage of total energy derived from renewable sources of the public transport. The rate of renewable energy in the BRT energy mix is estimated at 24% (see Annex D). As an objective indicator of the project, this rate will be monitored and recalculated during the project implementation once real data becomes available from the operations of the electrical buses and HCPV solar farm.

Beyond the reduction of GHG emissions and budgetary savings, the project's components will contribute to various outcomes as described below:

Outcome 1: Integrated planning, capacity-building and MRV systems for the low carbon BRT System

This component supports planning, monitoring, reporting, verification and the building of capacities of a future BRT system. The elaborated studies and concluded financial arrangements so far only apply to the first two BRT lines (L1 and L2). The BRT system would have to expand by adding two more lines (L3 and L4). Through this component, the project will support the TLDC in the financial planning for the future lines.

To evaluate the efficiency and efficacy of the BRT system, MRV activities will have to be implemented from the onset. Therefore, it is important to support the MRV system in order to set real time monitoring and verification practices as management means for continuous improvement, mainly to the new low carbon components. Support will be provided in part by helping TLDC identify the adequate profiles of human resource staff to be recruited.

The project supports the city's efforts in removing all institutional capacity and planning barriers that might impact the development of the BRT system. Even though awareness was integrated progressively at the institutional level,

¹⁷ Direct emissions reductions

building capacities of main stakeholders – from public or private sector – is key to the success and durability of the project results. Therefore, this component's role is also to build technical and managerial capacities.

This component aims to ensure capacity building at an operational level. Technicians from the TLDC will be trained on relevant best practices of energy management. Furthermore, and in order to ensure complementarity between the electrical BRT system and existing diesel buses, bus drivers will receive continuous eco-driving training in order to ensure less GHG emissions. The diesel bus drivers will first receive an eco-driving training certificate and the project will ensure that continuous trainings are provided to sustain the positive impact on fuel consumption.

This component will have the following three main outputs:

- Output 1.1: Financial planning of the future BRT lines is developed;
- Output 1.2: An MRV system for the BRT system, integrating sustainability dimensions across all facets of operation, is in place;
- Output 1.3: Municipal capacities on energy efficiency best practices in transport contexts are developed.

Outcome 2: Commissioning of 1 MW solar farm for powering of electric buses for the City's BRT System

As part of its on-going technical advisory support to the city of Marrakech, the SIE will be in charge of preparing all the technical specifications and tendering documents for the installation of the 1 MW HCPV solar farm. Since the project will be implemented following UNDP's "National Implementation Modality-NIM", according to the Standard Basic Assistance Agreement between UNDP and the Government of Morocco, the tendering process will be executed according to the national modalities of public tendering. Accordingly, a Tender Evaluation Committee will be established, with representatives from SIE, Delegate Ministry in charge of Environment and City of Marrakech, TLDC, and any other national or local entities (see section 3. Stakeholders). As indicated in section 1(a), the competitively selected solar energy company will sign a Build-Operate-Transfer (BOT) contract with the TLDC and will be responsible for the engineering, procurement, construction and operation of the solar farm.

This component is related to the procurement of all necessary upfront equipment to implement the innovative low carbon BRT system. The GEF investment will partially support the capital costs of the 1 MW HCPV farm to power the electrical buses with the remainder paid by The City. Based on the estimated capital cost, the GEF investment will represent a share of 55.88% with the remainder to be provided by the City of Marrakech via TLDC.

Beyond the investment aspect, the legal issue of the grid connection represents a key success factor of the project. SIE is already in discussions with Marrakech's autonomous water and electricity distribution board (RADEEMA) on the legal and financial arrangements for feeding the excess power into the grid. As part of its technical advisory service, the SIE will provide technical assistance on the plant's connection to electrical grid and net-metering system to design the most appropriate agreement according to the newly promulgated Decree n°2-15-772 (October 2015) that sets the regulatory framework to connect medium voltage renewable sources to local grid networks under the 2010 renewable energy law 13-09. It should be noted that the SIE, City of Marrakech and RADEEMA are already collaborating on another project regarding the production of electricity from biogas and its injection into the city grid and therefore the template/PPA used for that project will be replicated for this project.

Component 2 will generate the following outputs:

- Output 2.1 Construction and commissioning of the solar farm using a BOT model with partial funding from GEF;
- Output 2.2 Sustainable O&M system in place for solar farm.

Outcome 3: Knowledge management and awareness

This component will ensure the project and BRT system is successful through support for the development of communication and awareness activities targeted at the public to encourage the BRT system's utilization; these

will not be executed via GEF funds but rather through Government cost-sharing or Government channels. Additionally, this component aims to create a governance framework to ensure the replication of the project elsewhere in Morocco. A multi-actor committee will be created to capitalize on the experience of Marrakech that will include national, sub-national and local stakeholders. This component will include the following three outputs:

- Output 3.1: Lessons learnt, experiences and best practices related to the system are compiled and disseminated to other cities in Morocco
- Output 3.2: Communication and public awareness campaign for BRT utilization developed
- Output 3.3: A multi-stakeholder committee (within City of Marrakech) on low-carbon mobility is established and operational.

ii. Partnerships

Part of Marrakech 2014-2017 Development Plan, numerous projects were launched to provide outreach services, meet the challenges of housing, transport and environmental protection, and preserve cultural heritage of the city. With the advent of COP22, these projects find a unique opportunity for their display to the international community and demonstrate the engagement of the City of Marrakech, in particular, and the Kingdom of Morocco in general.

In this context, the City prepared a scoreboard containing all initiated and planned actions in order to develop a global overview of its roadmap towards COP22. The scoreboard helps avoid overlaps between the planned actions and ensure the highest complementarity between suggested activities.

In line with the proposed project, the City initiated other initiatives on sustainability, energy efficiency and GHG emission mitigation. An overview of the major initiatives is presented in the following table:

Initiative	Description	Development Status	Financial partners
Low carbon mobility	<ul style="list-style-type: none"> ▪ Create bicycles' rental stations and supply 300 bicycles ; ▪ Equip horse carriages with a renewable energy lighting ; ▪ Supply 2 to 3 electrical cars to promote clean transport. 	ToRs' preparation in progress	Wilaya and Municipality of Marrakech
Integrating energy efficiency and renewable energy in public buildings	<ul style="list-style-type: none"> ▪ Conception study for integrating energy efficiency and renewable energy in public buildings ; ▪ Implementing the concept in 4 public buildings (Wilaya, Hospital, Airport and Environment Observatory) 	ToRs' preparation in progress	Wilaya and Municipality of Marrakech
Establishment of an energy performance contract for public lighting	Public lighting Park renovation to reduce annual consumption of public lighting	Awarding phase by the Local Development Company in charge of street lighting Works to start	Wilaya, Municipality of Marrakech and Energy Investment Company (SIE ¹⁸).
Low carbon buses	▪ Transition towards electrical	▪ Creation of a	UNDP, Ministry of

¹⁸ SIE: Société d'Investissement Energétique

	BRT system ; ▪ 3 touristic electrical buses	dedicated TLDC ; ▪ Touristic buses in the awarding phase ; ▪ BRT feasibility study finalized ; ▪ Procurement of electrical buses ongoing.	environment, Wilaya, Municipality of Marrakech
Eco-driving initial training	Initial training on eco-driving of all bus drivers	Planning in progress	Municipality of Marrakech and bus operator ALSA
Air quality management	▪ Governance framework implementation ; ▪ Capacity building ; ▪ Procurement for air quality monitoring stations.	Planning in progress	Wilaya of Marrakech, Mohamed VI Foundation for Environmental Protection, National Meteorology Directory, Ministry of environment.

The multitude of projects contributing towards the same goal of improving energy efficiency and reducing GHG emissions is a favorable ground for a successful implementation of the three project components. Indeed, the activities planned part of the above initiatives will contribute to increasing the awareness vis-à-vis sustainable development and climate change and reinforce the commitment of all stakeholders and partners.

It is also important to mention that this project is completely independent of the low carbon mobility projects (bicycles, electrical cars, etc.). Similarly, for the eco-driving initial training initiative, which would certainly contribute to the expected outcomes of this project..

iii. Stakeholder engagement:

The implementation of a low carbon urban transport system requires the involvement of many actors from different levels such as institutional entities, private sector companies and population. The project calls for the mobilization and commitment of all stakeholders to ensure the expected results. The main sought stakeholders are detailed in the table below

	Stakeholder	Envisaged role in the project
Main Executing Partner	Delegate Ministry in Charge of Environment to the to the Ministry of Energy, Mining, Water and the Environment	<p>The Delegate Ministry in Charge of Environment has significant experience designing and implementing GHG mitigation projects. The Ministry is also the GEF and UNFCCC focal points and is presently heavily involved in the organization of COP22.</p> <p>The Ministry will be the lead executing agency of the proposed project and will Chair The Project Steering Committee (PB). The project components will be implemented by the Municipality at the request of the Delegate Ministry.</p> <p>The Ministry will also assist local partners during project</p>

		implementation with the support of its permanent team of engineers and managers based in Marrakech at the Regional Observatory for Environment and Sustainable Development.
Main Responsible Partner	Municipality of Marrakech	<p>The Municipality of Marrakech is the major stakeholder in the implementation of all project components. The municipality of Marrakech will be the responsible partner of the project and will be involved in planning, implementation, monitoring and funding of all activities.</p> <p>The Municipality has a key role in mobilizing a significant part of the project co-financing and in issuing the necessary municipal permits.</p>
Main Counterparts and Stakeholders	Transport Local Development Company (TLDC)	Created by the Municipality of Marrakech with more than 50% of capital shares and supported by the Council of Marrakech-Safi Region (30% of capital share), the TLDC will manage the BRT system. TLDC will own the electrical buses and the solar farm and oversee the BOT contractor. The TLDC will be the recipient of the financing from the Ministry of Interior and any other public or private funding source supportive of the BRT system.
	Energy Investment Company (SIE)	<p>SIE is already assisting the City of Marrakech in various projects, such as the improvement of the energy efficiency of public lighting, production of electricity from waste biogas, procurement of electrical buses, etc.</p> <p>For this project, SIE will be in charge of preparing all the technical specifications and tendering documents for the installation of the 1 MW HCPV solar farm on behalf of the City. SIE will provide also provide legal advice on solar farm connection to the city's electrical grid and net metering.</p>
	Marrakech's autonomous water and electricity distribution board (RADEEMA)	<p>Created as a local utility in 1970 upon a decision of the Council of the City of Marrakech, RADEEMA is in charge of the distribution of electricity and water and treatment wastewater. RADEEMA is supplied electricity from the national grid and distributed through its high voltage network (100% underground and 1288 km long) and low voltage network (57% underground and 2041 km long).</p> <p>RADEEMA's involvement in this project will relate to the connection of the HCPV solar farm to the city's electrical grid and establish of a net metering system with TLDC as the future owner of the solar farm.</p>
	BOT company (private firm)	The company that will be selected as a result of the bidding process of Component 2 and will be in charge of the engineering, procurement and construction of the 1 MW solar farm. The company will be also be in charge of operation and maintenance activities for a certain period to be decided in the tender document (the transfer timeline to TLDC is

		TBD).
	National Agency for the Development of Renewable Energy and Energy Efficiency (ADEREE)	<p>ADEREE is a public institution working for the widespread use of both renewable energy and energy efficiency. Framed by the Law 16/09, ADEREE's mission is to contribute to the implementation of the national renewable energy and energy efficiency policy. ADEREE has gained significant experience in the regional deployment of RE and EE through its territorial strategy "Jiha Tinou" in 3 pilot municipalities selected through an expression of interest (i.e.; Agadir, Oujda & Chefchaouen).</p> <p>ADEREE will support the Tender Evaluation Committee, provide technical assistance during the construction and operation of the solar farm. The TLDC can also benefit from the training courses that ADEREE intends to organize to build capacities at a local level. Regarding eco-driving, ADEREE has also some training experiences to be shared with the project.</p>
	Research Institute for Solar Energy (IRESEN)	<p>IRESEN was established to bring R&D in applied science nationwide, develop innovation and encourage networking. IRESEN also aims to ensure the definition of research areas; and to implement, fund and manage projects of Research and Development. IRESEN and OCP Group (national phosphate company) have joined forces to create a state of the art platform for research and training in renewable energy, namely The Green Energy Park¹⁹, with various solar energy testing facilities (PV, CSP).</p> <p>IRESEN will share its R&D expertise to assist the solar farm Tender Evaluation Committee, share its knowledge with the TLDC during operations, and capitalize on the project results to improve R&D in Morocco.</p>
	Ministry of Interior	<p>The Ministry of Interior, particularly the Planning and Infrastructure department from the General Direction of Local Authorities (DGCL), provides technical and financial supports to local authorities (Provinces, Prefectures and Municipalities) in improving their urban transport planning. In this project, the Ministry of Interior will play an important role by providing the necessary financial resources for the purchase of electrical buses from the dedicated national transport fund "FART".</p>
	Population	<p>The population of Marrakech, and particularly from suburbs, is the main beneficiary of the project. Given that the rate of public transport utilization depends entirely on the level of bus use by the population, the latter represents a key factor for the project's success.</p> <p>By offering a wider network, better comfort to users, higher bus frequencies, etc., the future BRT system will certainly offer enough to attract more users looking for appropriate transport means, whether from downtown or suburbs.</p>

¹⁹ <http://www.greenenergypark.ma>

		In this regard, COSs and local associations will be widely consulted, involved in project implementation. They will play a crucial rôle for population awareness for project sustainability purposes and will promote replication for other cities.
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Figure 7 below depicts the specific roles of stakeholders involved in Component 2.

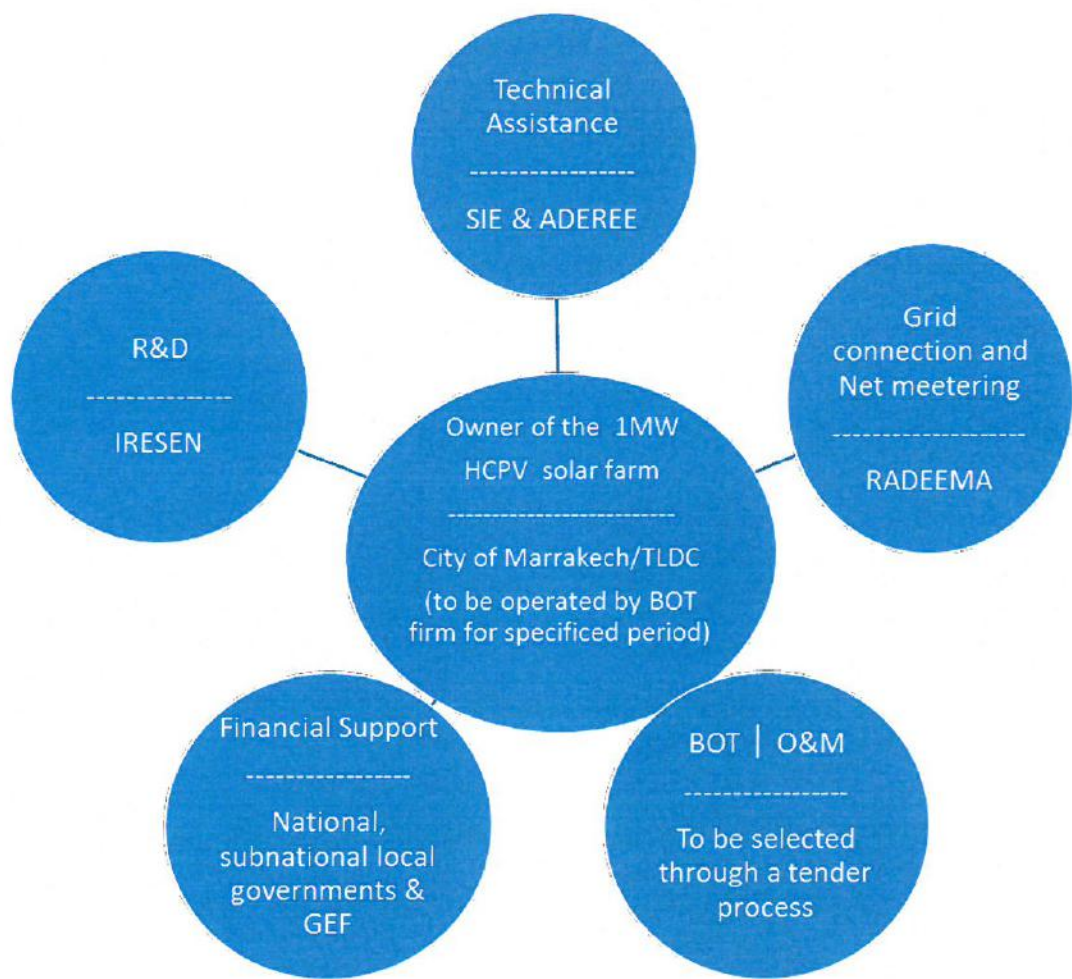


Figure 7: Role of the different stakeholders involved in Component 2

At the onset of the project, a participatory and inclusive approach will be perused to involve and engage all stakeholders. Such approach will ensure an optimal ownership and that stakeholder’ expectations can be met.

The stakeholders have expressed their engagement and determination to support the sector’s upgrade since the project’s inception meeting.

The participatory approach was adopted during the planning phase and will be unchanged during the implementation of the project. In fact, involving stakeholders when making decisions and validations is the main feature of this approach and is a guarantee for a successful implementation.

iv. Mainstreaming gender:

Gender issues in public urban transport are particularly relevant in Morocco. Indeed, women are significantly less likely than men to have a driving license. Instances of misbehavior, harassment, or violence towards users in general and women in particular have been reported. A majority of women in major cities consider that the state of public transport, particularly in terms of safety, obstructs their access to basic social services, limits their labor force participation, and potentially reduces their income.

Recognizing the importance of gender equality, the Municipality of Marrakech relies on this project to foster gender mainstreaming by quantifying and monitoring the number of direct beneficiaries disaggregated by gender. Women tend to choose their public transport means according to specific criteria, such as comfort and security. During the design phase of the Urban Transport Plan, safety and comfort aspects were considered as high priorities by the Municipality to ensure an optimal and equal utilization of the system by men and women. In this context, the BRT network was expanded to serve the suburbs that are presently less serviced by the actual bus system and less attractive to women especially for security reasons. Furthermore, the new buses will offer a great improvement in comfort and quality of service, which will meet the needs of not only women but also the needs of other vulnerable categories of beneficiaries such as the elderly, pregnant women and disabled people.

Improved urban mobility will have various positive impacts on women, mainly those living in suburbs that are socially disadvantaged, via the following: i) by shortening distances in a secure and comfortable way, thereby creating more access to economic opportunities and new jobs; and ii) easier access to some vital social services available at the city center such as education facilities (universities, technical training centers, private schools, etc.) and health care centers.

Mainstreaming gender and monitoring project results will be expressed in the gender-specific objective indicator based on the number of project beneficiaries disaggregated by gender (see Annex A). Based on the estimated gender impact and level of gender mainstreaming set by UNDP, the project is considered gender targeted. The project addresses the gender aspects and will significantly contribute to meeting the needs of the various above-mentioned social groups (women, elderly and disabled).

Moreover, the project will aim to ensure that both women and men are provided equal opportunities to participate in and benefit from the project, without compromising the technical quality of the project results, in particular:

- Efforts will be made to promote participation of women in training activities, both at managerial and technical levels, as participants and facilitators;
- Gender-sensitive recruitment will be practiced at all levels where possible, especially in the selection of project staff;
- All decision-making processes will consider gender dimensions. At project management level, Project Steering Committee meetings will invite observers to ensure that gender dimensions are represented. At the level of project activity implementation, effort will be made to consult with stakeholders focusing on gender equality and women's empowerment issues;
- When data-collection or assessments are conducted as part of project implementation, sex-disaggregated data will be collected, for instance data related to male and female bus utilization ratio;
- Gender-sensitive language will be used in all communication and awareness activities.

v. South-South and Triangular Cooperation (SSTrC):

South-South and Triangular Cooperation (SSTrC) is a necessity to ensure an inclusive global partnership towards sustainable development. The project will support and encourage SSTrC through Components 3 to ensure knowledge exchanges and technology transfers.. Components 3 will strive to disseminate and capitalize on the project results to ensure a replication in other southern developing countries.

On a short term, COP22 offers a unique opportunity to exhibit and share with various partners the planed project through side events and site visits in Marrakech. To this end, a global program of side events and activities throughout the city of Marrakech is under way. Considered as an African COP, Moroccan authorities will ensure that SSTrC are in the perspectives beyond COP22.

IV. FEASIBILITY

i. Cost efficiency and effectiveness:

The project supports the initiated transition to a low-carbon model in the urban transport sector. By using electric buses, power will be supplied from electrical energy to the BRT system. Regarding the local context, solar energy is the best source to use and the City of Marrakech offers ideal conditions yearlong. According to the Moroccan Solar Potential Map (see Figure 8), Marrakech offers over 3,000 hours/year of sunshine with an irradiation of more than 5 kWh/m²/day. To match this great solar potential, the HCPV technology is the most appropriate technology with a significant yield of around 40%.

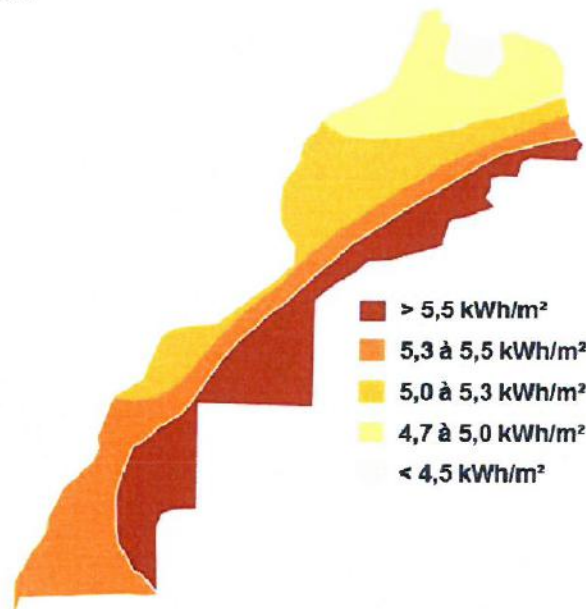


Figure 8: Moroccan Solar Potential Map

The choice of solar energy and HCPV technology offers many advantages leading to the expected results in terms of sustainability and GHG's emissions reduction. In addition to the local context in favor of the choice of solar energy, the main project stakeholders do have significant experience in solar energy related-projects. ADEREE and SIE have already been involved in several small, medium or large scale solar energy related projects. For example, ADEREE launched solar photovoltaic related studies to assess in detail the potential of some regions of Morocco. On the other hand, SIE will also provide an important advisory support since it is actively involved in the National Solar Program and seals agreements with Municipalities to provide technical and financial assistance.

Moreover, the proposed components is an indication that the main success factors are considered. Since the Municipality is familiar with international and national cooperation projects integrating capacity building as a main component, capacity building activities planned part of the project will ensure sufficient understandings and improve skills to ensure ownership and sustainability. Beyond capacity building aspects, a hand on practical experiences and lessons learned will also sustain capitalization and replication. Thus, the project's knowledge management integration would ensure a proper experience sharing and an efficient replication.

The GEF financial resources are particularly important for the project implementation. Indeed, without these resources, the Municipality of Marrakech would be unable to carry out the different phases of the projects on its own, namely HCPV funding, acquisition and implementation, along a regular monitoring of activities. Moreover, the Municipality is heavily involved in the COP22 preparatory work and associated initiatives. Thus, GEF's financial support and stakeholders' supports in project implementation are key factors to the success of the project.

Based on the available information, preliminary and partial estimations of the CO2 savings per US dollar of GEF contribution has been calculated. With a total GEF contribution of 1.5 million USD, the unit abatement cost that will be achieved by the project will be 54.89 US\$/tCO2e based on direct emissions and a range of 14.48 – 19.80 - US\$/tCO2e for indirect emissions. The indirect emissions are considered a more appropriate proxy of the cost-effectiveness of the project given the innovative nature of the project and high potential for replication.

ii. Risk Management:

As per standard UNDP requirements, the National Project Coordinator will monitor risks quarterly and report on the status of risks to the UNDP Country Office. The UNDP Country Office will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probability are high (i.e. when impact is rated as 5, and when impact is rated as 4 and probability is rated at 3 or higher). Management responses to critical risks will also be reported to the GEF in the annual PIR.

Project risks					
Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
Insufficient funding to ensure the procurement of electric buses and the HCPV solar plant	Financial	P = 2 I = 4	Support will be provided by the National Government given its engagement in COP22	National Project Coordinator	
Lack of sufficient funding to cover the maintenance cost of the HCPV solar plant	Financial	P = 2 I = 3	The maintenance cost will be integrated in the annual operational budget of the Local Development Company of Transport (TLDC) which will own the solar plant.	National Project Coordinator	
Additional lines of the BRT system are not approved by the City Council	Political	P = 2 I = 2	Engagement of the City of Marrakech in organizing COP22 and high political will in demonstrating the sustainable development capacities supported by the National Government.	National Project Coordinator	
The BRT system is not appropriately managed and monitored	Operational	P = 3 I = 4	The Local Development Company of Transport is expected to have all the necessary support and means to ensure a proper management of the BRT system. The contracting of a BOT firm in the short-term will assure that the capacity is built over time before TLDC takes over running of the solar farm. Capacity building efforts of the project will strengthen all the BRT stakeholders in their capacity to maintain successful operation of the transport system.	Municipality of Marrakech	
The drivers do not respect the eco-driving principals	Operational	P = 3 I = 1	Continuous training every year and implementation of an incentive scheme for energy efficient drivers. Monitoring of diesel consumption per each single driver.	Local Development Company of Transport	
Low share of bus travels with respect to other urban transport modes	Operational	P = 2 I = 3	Implementation of awareness campaigns targeting potential users. The City is committed to ensuring that the ticket cost will remain affordable.	Local Development Company of Transport	
Inadequate and/or non-capacitated human resources to successfully	Operational	P = 2 I = 4	The project includes significant capacity building and outreach components to help overcome this risk.	National Project Coordinator	

implement the project and support the mainstreaming of its results.					
Management of obsolete electric bus batteries	Environmental	P = 2 I = 2	This risk will not occur during the project implementation period. However, the TLDC will work closely with the MdE to ensure conformity with the national waste regulations.	Local Development Company of Transport	

iii. Social and environmental safeguards:

The project aims to ensure urban transport sustainability along with an abatement of GHG emissions. To this end, the project includes different dimensions to ensure environmental sustainability by improving the entire system's energy efficiency. As indicated in Annex H, considering the potential risks during the construction and installation phase of the HCPV solar farm, the project is considered to have a moderate risk levels. However, these risks can be appropriately managed and mitigated.

Therefore, the project is environmental friendly aiming to ensure sustainable development through a cut of GHG emissions, improvement of air quality, production of clean energy and reduction of fossil fuel consumption.

iv. Sustainability and Scaling Up:

The project is in line with the country's overall policy objectives on GHG emissions reductions, improvement of public transport and development of renewable energy sources. The project takes advantage of a globally structured foundation, a clear national vision embedded in the INDC (NDC in the future) and a strong leadership at the local governmental level.

Institutional strengthening and capacity building are significant components in this project and key for establishing a basis for sustainability. As an ongoing process, institutional strengthening and capacity building are fundamental components that will ensure project sustainability and continued success through the effective management of the low carbon BRT system. With institutional capacities strengthened – particularly those of the City of Marrakech and TLDC – these organizations will be able to provide the coordination and monitoring required for future extensions of the BRT system. The use of a BOT model by a qualified private sector firm will ensure that local capacities are built among local actors.

Furthermore, Morocco has several projects and programs aimed at capacity building and the provision of technical assistance in the mitigation of GHG emissions which will help support this project with respect to the use of PV technology and eco-driving. Various other international initiatives (such as the UNDP-GEF Logistics project, UNEP FIRM and UNDP LECB projects) that are designed to strengthen Morocco's technical and institutional capacities relating to low carbon development, design of robust MRV systems, development and implementation of NAMAs, etc will help make sure this project has the required support for long-term sustainability. These initiatives will provide significant support for the project yielding results over the short and long term.

The commitment expressed by the partners will help ensure the funding and implementation of the various measures planned as part of this project. The financial sustainability of these measures will require the mobilization of additional resources that can go beyond national funding capacities. Morocco's current desire to shift its development towards a low-carbon pathway will be the main driver of future initiatives. So far, Morocco has shown strong leadership in the MENA region and globally²⁰ in attracting international finance and has all the

²⁰ According to the web site <http://www.climatefundsupdate.org>, Morocco is ranked first in the MENA region as a recipient of multilateral and bilateral funding. In terms of multilateral funding, Morocco is the 4th recipient on the global level.

capabilities to sustain this commitment. It ranks first in attracting private capital to the RE sector among MENA countries in the 2015 Arab Future Energy Index which is a testament to its commitment to market-based models.

Improvement of management, particularly through capacity building for a dedicated TLDC and the multi-stakeholders' committee, will contribute and facilitate the project's potential for scaling-up. The TLDC mandate is to ensure a proper and efficient management of the BRT system as well as its scaling-up by adding more lines to serve the growing population needs and expanding urbanization. On the national side, the multi-stakeholders committee will focus on capitalizing on Marrakech's experience and ensuring its replication elsewhere in the country among the many large and mid-size cities in Morocco planning their new public transport system. In this perspective, the Energy Investment Company (SIE) will play a major role given its leading role in promoting the development of new energy platforms through investment and project development in Morocco, with Municipalities as their chief partner.

V. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): Low-carbon public transport					
This project will contribute to the following country outcome included in the UNDAF/Country Programme Document:					
Outcome 5: The principles of the "National Charter for the Environment for Sustainable Development" are implemented in coherence between sectoral strategies and priorities for the environment, climate change adaptation and risk management and by strengthening territorial convergence in areas and the most vulnerable populations with special attention to gender.					
This project will be linked to the following output of the UNDP Strategic Plan:					
Output 1.5: Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access (especially off-grid sources of renewable energy)					
Project Objective:	Objective and Outcome Indicators	Baseline	End of Project Target	Assumptions	
To support the low-carbon integration of the Bus Rapid Transit (BRT) System under implementation by the City of Marrakech through the installation of 1 MW solar farm based on High Concentration PhotoVoltaics (HCPV) technology. The energy produced by the farm will help power electric buses to showcase an integrated low-carbon transport system that can be replicated in other cities in Morocco.	Extent of change in modern energy coverage by users and specific sectors (IRRF Indicator 1.5.2)	0	24% of the BRT supplied by solar power generated by HCPV solar farm	Integration of electrical buses in the BRT system charged by the HCPV solar plant	
	Direct number of daily beneficiaries of lines L1 and L2 of the public bus system	50 000 (20 000 for L1 and 30 000 for L2) with a rate of usage by women of 31% in suburban areas and 44% (in urban areas)	71 000 (36 000 for L1 and 35 000 for L2) with rate of usage by women of 50% in both urban and suburban areas	A BRT system with a high level of comfort and service will be attractive to new beneficiaries, particularly women, in comparison to other transport modes. Specific communication and awareness campaigns will be designed to improve bus ridership among women with respect to other urban transport modes.	
	Tons of incremental CO2 equivalent avoided as a direct result of project activities	0 tCO2 (11 150 tCO2 emitted in 2015 by 121 diesel buses)	27 327 tCO2	Electric buses are integrated in the BRT system of Marrakech and powered from a 1 MW HCPV solar farm. Diesel buses drivers are trained on eco-driving practices.	
	Km of high capacity public transport system (BRT) per 100 000 population	0	2.18	Two BRT lines will be operational by COP22 and will service a population of 900 000. The new lines L1 and L2 will have a length of 10.9 and 8.8 km, respectively. The dedicated road infrastructure for these two BRT lines is available.	
Component/Outcome 1 Integrated planning, built capacities and MRV systems for the low carbon BRT System	Completion of financial planning documents for the future BRT lines (L3 and L4)	0	100%	The engineering studies of L3 and L4 are ongoing. Political will to extend the BRT system	
	Number of low carbon indicators in the MRV system	0	3	The MRV system of the BRT system will integrate at least 3 low carbon indicators regarding diesel consumption, electrical production of the solar farm, and electrical consumption of the electrical buses	

	% of TLDC technical employees and bus drivers trained on the best practices of energy efficiency	0%	100%	High involvement and participation rate of TLDC management and technical employees Political will at the City Council. The actual bus operator (ALSA) will provide an initial training to all drivers (270) on eco-driving before COP22 and set-up an eco-driving performance bonus system
Component/ Outcome 2 Commissioning of 1 MW solar farm for powering of electric buses for BRT System	Amount of installed MW from the HCPV solar farm	0 MW	1 MW	The political will of the City Council in powering the the electrical buses from a renewable source GEF supports the incremental investment cost
	An O&M system is in place	0	1	O&M will be included in the tender specifications to ensure the durability of solar energy production. The BOT company will be responsible for operations and maintenance (as part of its contract) for an initial period while arrangements are put in place at TLDC
	Number of events organized to communicate Marrakech's sustainable urban transport experience	No events have been conducted	At least two high-level events	High level of commitment and engagement of all stakeholders COP22 represents an ideal event to communicate and exhibit Marrakech's initiatives
Component/ Outcome 3 Knowledge management and awareness	Number of platforms (TV campaigns, ads, etc) developed for public communication and awareness regarding low-carbon transport and solar energy	0	10	The City of Marrakech is aware of the importance of using various means to outreach various population groups such as a web site, social media, radio, TV, brochures, etc.
	Number of replication plans proposed by the multi-stakeholder committee for other cities	0	1	High level of commitment and engagement of all stakeholders. COP22 will spur a paradigm shift

VI. MONITORING AND EVALUATION (M&E) PLAN

The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results. Supported by Outcome Four “Capitalization, replication, communication and awareness”, the project will facilitate learning and ensure that knowledge is shared and widely disseminated to support the scaling up and replication of project results.

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. While these UNDP requirements are not outlined in this project document, the UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additional mandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the GEF M&E policy and other relevant GEF policies.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The GEF Operational Focal Point will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved for example by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF Agencies.

M&E Oversight and monitoring responsibilities

▪ National Project Coordinator

The National Project Coordinator is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The National Project Coordinator will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The National Project Coordinator will inform the Project Steering Committee, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

The National Project Coordinator will develop annual work plans based on the multi-year work plan included in Annex C, including annual output targets to support the efficient implementation of the project. The National Project Coordinator will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. gender strategy, KM strategy etc..) occur on a regular basis.

▪ Project Steering Committee

The Project Steering Committee will take corrective action as needed to ensure the project achieves the desired results. The Project Steering Committee will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project’s final year, the Project Steering Committee will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

▪ Project Implementing Partner

The Implementing Partner is responsible for providing any and all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary and appropriate. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes,

and is aligned with national systems so that the data used by and generated by the project supports national systems.

▪ **UNDP Country Office**

The UNDP Country Office will support the National Project Coordinator as needed, including through annual supervision missions. The annual supervision missions will take place according to the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and Project Steering Committee within one month of the mission. The UNDP Country Office will initiate and organize key GEF M&E activities including the annual GEF PIR and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the UNDP POPP. This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the National Project Coordinator.

The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

▪ **UNDP-GEF Unit**

Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.

Audit: The project will be audited according to UNDP Financial Regulations and Rules and applicable audit policies on NIM implemented projects.²¹

Additional GEF monitoring and reporting requirements

▪ **Inception Workshop and Report**

A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:

- a. Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project implementation;
- b. Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
- c. Review the results framework and finalize the indicators, means of verification and monitoring plan;
- d. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP in M&E;
- e. Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; Environmental and Social Management Plan and other safeguard requirements; the gender strategy; the knowledge management strategy, and other relevant strategies;
- f. Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and

²¹ See guidance here: <https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx>

- g. Plan and schedule Project Steering Committee meetings and finalize the first year annual work plan.

The National Project Coordinator will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Steering Committee.

- **GEF Project Implementation Report (PIR)**

The National Project Coordinator, the UNDP Country Office, and the UNDP-GEF Regional Technical Advisor will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The National Project Coordinator will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR.

The PIR submitted to the GEF will be shared with the Project Steering Committee. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

- **Lessons learned and knowledge generation**

Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

- **GEF Focal Area Tracking Tools**

A GEF Tracking Tool(s) will be used to monitor global environmental benefit results:

The baseline/**CEO Endorsement GEF Focal Area Tracking Tool(s)** – submitted in Annex D to this project document – will be updated by the National Project Coordinator/Team and shared with the terminal evaluation consultants (not the evaluation consultants hired to undertake the TE) before the required review/evaluation missions take place. The updated GEF Tracking Tool(s) will be submitted to the GEF along with the completed Terminal Evaluation report.

- **Terminal Evaluation (TE)**

An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The National Project Coordinator will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects (available on the [UNDP Evaluation Resource Center](#)). The evaluation will be "independent, impartial and rigorous". The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Steering Committee. The TE report will be publically available in English on the UNDP Evaluation Resource Centre (ERC).

The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP ERC. Once uploaded to the ERC, the UNDP IEO will undertake a quality assessment and

validate the findings and ratings in the TE report, and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

▪ **Final Report**

The project's terminal PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Steering Committee during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Mandatory GEF M&E Requirements and M&E Budget

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ²² (US\$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	UNDP Country Office	3,000	In-kind	Within two months of project document signature
Inception Report	National Project Coordinator	None	None	Within one month of inception workshop
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	UNDP Country Office	None	None	Quarterly, annually
Monitoring of indicators in project results framework	National Project Coordinator	None	None	Annually
GEF Project Implementation Report (PIR)	National Project Coordinator and UNDP Country Office and UNDP-GEF Regional Technical Advisor	None	None	Annually
NIM Audit as per UNDP audit policies	UNDP Country Office	1,500 x 2 = 3,000	None	Annually or other frequency as per UNDP Audit policies
Lessons learned and knowledge generation	National Project Coordinator Project Steering Committee	2,000	None	Annually
Monitoring of environmental and social risks, and corresponding management plans as relevant	National Project Coordinator UNDP CO	None	None	Ongoing
Addressing environmental and social grievances	National Project Coordinator UNDP Country Office BPPS as needed	None	None	Costs associated with missions, workshops, BPPS expertise etc. costs charged to the project budget

²² Excluding project team staff time and UNDP staff time and travel expenses.

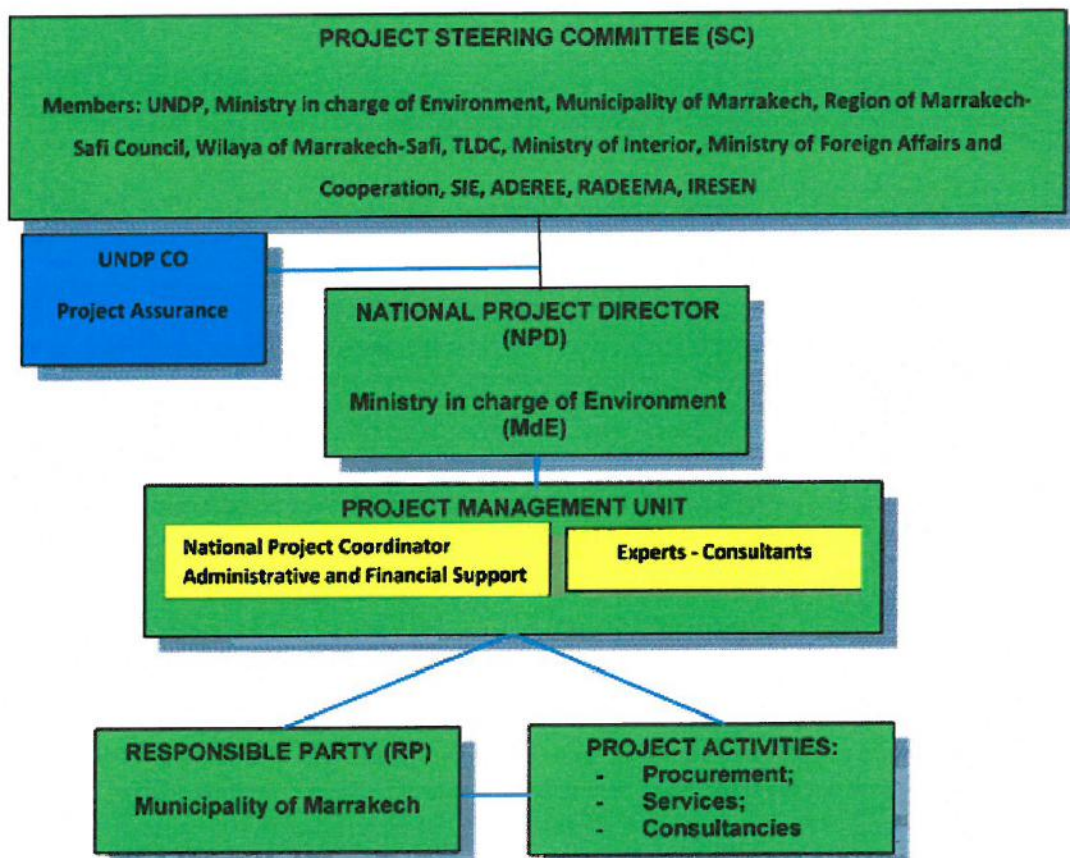
GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ²³ (US\$)		Time frame
		GEF grant	Co-financing	
Project Steering Committee meetings	Project Steering Committee UNDP Country Office National Project Coordinator	None	In-kind	At minimum annually
Supervision missions	UNDP Country Office	None ²³	None	Annually
Oversight missions	UNDP-GEF team	None	None	Troubleshooting as needed
Knowledge dissemination and management as outlined in Outcome 3	National Project Coordinator Project Steering Committee	15,000	In-kind	At least three months before the end of the project
GEF Secretariat learning missions/site visits	UNDP Country Office and National Project Coordinator and UNDP-GEF team	None	None	Annually
Terminal GEF Tracking Tool by National Project Coordinator	National Project Coordinator	10,000	In-Kind	Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP Country Office and Project team and UNDP-GEF team Consultants	20,000	In-Kind	At least three months before operational closure
Translation of TE reports into English	UNDP Country Office	4,000	None	Directly after the validation of French TE reports
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		57,000	In-Kind	

²³ The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GEF Agency Fee.

VII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

The project will be implemented following UNDP's "National Implementation Modality-NIM", according to the Standard Basic Assistance Agreement between UNDP and the Government of Morocco, and the Country Programme. UNDP ensures quality assurance throughout the project.

The project implementation structure and institutional arrangements are detailed in the project organisation structure as follows:



The **Implementing Partner** for this project is the Ministry of Environment (MdE). The Implementing Partner is responsible for achieving the Project's objectives and for ensuring proper alignment with national policy. MdE will be supported by the UNDP Country Office in conformity with the Standard Basic Assistance Agreement and the UNDP Country Program Action Plan (UNDAF).

The Municipality of Marrakech is designated as a **Responsible Party (RP)** for all components. RP is selected to act on behalf of the Implementing Partner on the basis of a written agreement to purchase goods or provide services using the project budget. In addition, the RP may manage the use of these goods and services to carry out project activities and produce outputs. RP is directly accountable to the Implementing Partner in accordance with the terms of the agreement. MdE use the Municipality of Marrakech as RP in order to take advantage of its specialized skills, to mitigate risk and to relieve administrative burdens.

The **Steering Committee (SC)** is the group responsible for making by consensus management decisions for a project when guidance is required by the Project Coordinator, including recommendation for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, SC decisions

should be made in accordance to standards that shall ensure best value to money, fairness, integrity, transparency and effective international competition. Project reviews by this group are made at designated decision points during the running of a project, or as necessary when raised by the Project Coordinator. This group is also consulted by the Project Coordinator for decisions when project management tolerances (normally in terms of time and budget) have been exceeded. The SC will meet at least twice a year or as needed. The terms of reference for the Project Steering Committee are contained in Annex G.

The responsibilities and roles of the Steering Committee include:

- Approve the annual work plan;
- Monitor and evaluate project performance in terms of results and financial disbursements;
- Monitor the progress of discontinued operations;
- Review and validate the progress reports and results;
- Recommend actions and activities that meet the needs and policy;
- Coordinate inter-institutional relations in connection with the project and help remove any difficulties that may arise in its implementation.
- Develop and approve an exit strategy in the previous semester to project closure.

UNDP is the GEF Implementing Agency for the Project. The UNDP Country Office (CO) will ensure that GEF funds are disbursed and administered in accordance with UNDP's fiduciary standards and in alignment with the objective of the Project. The UNDP CO will monitor the Project's implementation and achievement of the project outcomes and outputs, provide overall guidance and recommendations to enhance project performance, and promote the exchange of experiences and lessons learned across its global portfolio and other members of the international donor and financial community.

The **project assurance** role will be provided by the UNDP Country Office. Additional quality assurance will be provided by the UNDP Regional Technical Advisor as needed.

The **Quality Assurance** Project function is a responsibility delegated by the Steering Committee of the project to the UNDP Country Office who will attend to the good progress and quality of the project and support it by providing the expertise networks of United Nations. Additional quality assurance will be provided by the UNDP Regional Technical Advisor as needed.

It is necessary to separate the functions of project support and project assurance to maintain the independence of quality control developed by the project's assurance. Monitoring carried out by the UNDP in its agent's quality of management and its role of the project's quality assurance.

The UNDP will establish and communicate the explanatory and financial reports according to its policies and procedures reports, as well as in its operational guidelines. Moreover, the UNDP in its function of the project's quality assurance will have to feed the monitoring tools required by the Atlas system, including:

- Seizure of the information contained in the quarterly report submitted by the National Project Coordinator in Atlas at the end of each quarter;
- Logs' risks update and problems in Atlas at the end of each quarter, based on information from the quarterly report submitted by the National Project Coordinator;
- Based on the information entered in Atlas, a quarterly report from Atlas will be submitted to the CP;
- Monitoring plan will be updated regularly in Atlas to record the actions of major monitoring.

The National Project Director (NPD) will administer the Project on a day-to-day basis on behalf of MdE in line with UNDP Policies and Procedures and assume direct responsibility for the successful implementation of the Project towards the objectives and outcomes specified in the Project Document.

The NPD is accountable for the quality, timeliness and effectiveness of the activities carried out, and for the appropriate use of project funds. The NPD will represent the Project at the highest national political level and at relevant national and international events. He/she will ensure adequate coordination with other Government entities and programs and provide advocacy for the Project at the highest levels. The NPD will further liaise with relevant parallel initiatives and exploit synergies wherever possible and relevant.

The day-to-day management of the Project shall be entrusted to the Project Management Unit (PMU) which will be accountable to the NPD and SC for the performance of the project. The PMU will consist of the following persons: National Project Coordinator (PC) and Project Officer (UNV). The PC and PO (UNV) will be recruited by the UNDP and funded with GEF resources. Both PC and UNV will be full-time positions.

The PMU will have responsibility for, among others tasks: (i) managing and executing the Project; (ii) coordinating the management of financial resources and procurement; (iii) reporting on the application of resources and results achieved; (iv) preparing reports for the PB, UNDP, and the GEF; (v) promoting of inter-institutional linkages; and (vi) monitoring and evaluation, and disseminating project results.

The **National Project Coordinator** will run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the SC. The Project Coordinator function will end when the final project terminal evaluation report and corresponding management response, and other documentation required by the GEF and UNDP, has been completed and submitted to UNDP (including operational closure of the project).

The National Project Coordinator main responsibility is the outcomes expected from the project and described in the project document results, depending on the required quality standards, and taking into account the specificities and constraints of time and costs outsourced. The National Project Coordinator works under the direct supervision of the Implementing Partner, and under the authority of Steering Committee, according to standards established by the committee and the attached Terms of References (see Annex G).

The National Project Coordinator will be based at the Municipality of Marrakech, who will provide adequate office space for the managing team (Project Coordinator and Administrative and Financial Support).

The day-to-day management of the Project shall be entrusted to the **Project Management Unit (PMU)** which will be accountable to the NPD and SC for the performance of the project. The PMU will consist of the following persons: National Project Coordinator (PC) and Project Officer (UNV). The PC and PO (UNV) will be recruited by the UNDP and funded with GEF resources. Both PC and UNV will be full-time positions.

The PMU will have responsibility for, among others tasks: (i) managing and executing the Project; (ii) coordinating the management of financial resources and procurement; (iii) reporting on the application of resources and results achieved; (iv) preparing reports for the PB, UNDP, and the GEF; (v) promoting of inter-institutional linkages; and (vi) monitoring and evaluation, and disseminating project results.

Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information: In order to accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy²⁴ and the GEF policy on public involvement²⁵.

²⁴ See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

²⁵ See https://www.thegef.org/gef/policies_guidelines

VIII. FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is USD57,493,546. This is financed through a GEF grant of USD 1,369,863 million, USD 55,473,683 in cash co-financing from the City of Marrakech and USD 700,000 in parallel in-kind co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources.

Parallel co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation process and will be reported to the GEF. The planned parallel co-financing will be used as follows:

Co-financing source	Co-financing type	Co-financing amount	Planned Activities/Outputs	Risks	Risk Mitigation Measures
National Government - Delegate Ministry in charge of Environment	In-kind	300,000	Management and coordination	Lack of engagement	Maintain a transparent management
Municipality of Marrakech - City of Marrakech	Cash	55,473,683	Construction of BRT infrastructure and procurement of electrical buses and HCPV solar plant	Lack of financial support from the National Government	Provide political support
Municipality of Marrakech - City of Marrakech	In-kind	300,000	office space and project coordination	Lack of engagement	Maintain a transparent management
Energy Investment Company (SIE)	In-kind	100,000	Technical and legal expertise	Lack of engagement	Maintain a transparent management

Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the Project Steering Committee will agree on a budget tolerance level for each plan under the overall annual work plan allowing the National Project Coordinator to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Steering Committee. Should the following deviations occur, the National Project Coordinator and UNDP Country Office will seek the approval of the UNDP-GEF team as these are considered major amendments by the GEF:

- Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more;
- Introduction of new budget items/or components that exceed 5% of original GEF allocation.

Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

Refund to Donor: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal

Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Steering Committee meeting. The Implementing Partner through a Project Steering Committee decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

Financial completion: The project will be financially closed when the following conditions have been met:

- a) The project is operationally completed or has been cancelled;
- b) The Implementing Partner has reported all financial transactions to UNDP;
- c) UNDP has closed the accounts for the project;
- d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

The project will be financially completed within 12 months of operational closure or after the date of cancellation. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

IX. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Atlas Proposal or Award ID:	00097409	Atlas Primary Output Project ID:	00101152
Atlas Proposal or Award Title:	Renewable Energy for the City of Marrakech's Bus Rapid Transit System		
Atlas Business Unit	MAR10		
Atlas Primary Output Project Title	Centrale Solaire PV BRT Marrakech		
UNDP-GEF PIMS No.	5890		
Implementing Partner	The Municipality of Marrakech (MoM)		

GEF Component/Atlas Activity	(Atlas Implementing Agent)	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Total (USD)	See Budget Note:
COMPONENT/ OUTCOME 1: Integrated planning, capacity-building and MRV systems for the low carbon BRT System	MoM	62000	GEF	72100	Contractual Services-Companies	74 875	70 000	144 875	1
				75700	Training, Workshops and Confer	12 500	12 500	25 000	2
					sub-total GEF	87 375	82 500	169 875	
					Total Outcome 1	87 375	82 500	169 875	
COMPONENT/ OUTCOME 2: Commissioning of 1 MW solar farm for powering of electric buses for the City's BRT System	MoM	62000	GEF	72100	Contractual Services-Companies	25 000	25 000	50 000	3
				72200	Equipments&Furniture	450 000	450 000	900 000	4
					sub-total GEF	475 000	475 000	950 000	
					Total Outcome 2	475 000	475 000	950 000	

OUTCOME 3: Knowledge management and awareness	MoM	62000	GEF	71400	Contractual Services - Individ		20 000	20 000	5	
				71300	Local Consultants	25 000		15 000	6	
				72100	Contractual Services-Companies			4 000	4 000	7
				74100	Professional Services	3 000		3 000	6 000	8
				75700	Training, Workshops and Confer	5 000		5 000	10 000	9
					sub-total GEF	33 000		47 000	80 000	
					Total Outcome 3	33 000		47 000	80 000	
Project Management Unit	Mom/UNDP	62000	GEF	71400	Contractual Services - Individ	52 000	52 000	104 000	10	
				71600	Travel	2 500	2 500	5 000	11	
				72800	Information Technology Equipmt	2 000	988	2 988	12	
				72500	Supplies	5 000	3 000	8 000	13	
					sub-total GEF	61 500	58 488	119 988		
					Total Project Management	61 500	58 488	119 988		
					SUB-TOTAL GEF	656 875	662 988	1 319 863		
					PROJECT TOTAL	656 875	662 988	1 319 863		

Summary of funds:

	Amount Year 1	Amount Year 2	Total
GEF	656 875	662 988	1 319 863
National Government (cash and in-kind)	28 086 842	28 086 841	56 173 683
TOTAL	28 743 717	28 749 829	57 493 546

BUDGET NOTES:

No	Note
1	Contractual services to support the City of Marrakech in the design of the BRT monitoring system, develop the financial scheme of future lines and build capacities on energy efficiency best practices in transport contexts
2	Workshops and trainings
3	Contractual services to assist the City of Marrakech in grid connection of the HCPV solar farm from legal and technical perspectives
4	Equipments to partially finance HCPV installation
5	Contractual services to undertake terminal evaluation
6	Local consultants to support design of capitalization, awareness and communication activities
7	Translation cost of the terminal evaluation
8	Audit costs
9	Awareness workshops and conferences
10	Local long-term consultants / core project team consisting of the National Project Coordinator and administrative assistant
11	Project team travel cost
12	Software, computers and IT tools for the project team.
13	Office equipment and supplies for the project team.

Award ID:	00097409
Award Title:	Renewable Energy for the City of Marrakech's Bus Rapid Transit System
Business Unit:	MAR10
Project Title:	Centrale Solaire PV BRT Marrakech
Project ID:	00101152
PIMS No.:	5890
Implementing Partner (Executing Agency)	UNDP Morocco

GEF Outcome/Atlas Activity	Responsible Party/	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 2016 (USD)	Total budget (USD)	Budget notes:
Project preparation grant to finalize the project document for the UNDP-GEF project "Renewable Energy for the City of Marrakech's Bus Rapid Transit system"	UNDP	62000	GEF TRUSTEE	71300	Local Consultants	50,000	50,000	1
					PROJECT TOTAL	50,000	50,000	

BUDGET NOTES:

1. Fee for one national consultant

X. LEGAL CONTEXT

The UN System's Development Assistance Framework in Morocco (UNDAF) developed and signed by the Moroccan Government²⁶ and the UNS, is a binding legal agreement covering the UNDP's five-year program of activities in Morocco. At the project level, the planning and implementation reference document consists of the Annual Work Plan (AWP) signed by the Implementing Partner for one calendar year²⁷. Therefore, for a more effective measure of performance, the project's expected outcomes have been included in the wider framework of the UNDAF Outcome, and the combination of these two documents constitutes the "project document".

This project description constitutes the instrument referred to in Article 1 of the Standard Basic Assistance Agreement (SBAA) agreed between the Moroccan government and the United Nations Development Program and signed by the parties on May 13, 1982.

The Government of the Kingdom of Morocco (hereinafter "the Government") and the United Nations Development Program (hereinafter the "UNDP") concluded a basic agreement to manage UNDP assistance to the country which was signed by the two parties on May 13, 1982. According to Article 1, paragraph 2 of the SBAA, the assistance provided by the UNDP to the Government will be made available to the Government and shall be furnished and received in line with the relevant and applicable resolutions and decisions of the competent UNDP bodies, and subject to the availability of the necessary funds to the UNDP. In particular, decision 2005/1 of January 28, 2005 of the UNDP Executive Board approved the new financial regulations and rules as well as the new definitions of the terms "execution" and "implementation", enabling the UNDP to fully implement the Common Country Program Procedures resulting from the simplification and harmonization initiative of the United Nations Development Group ("UNDG"). In light of this decision, the UNDAF and the AWP constitute together a project document as referred to in the basic agreement (SBAA).

²⁶ Implementation of the UNDAF is entrusted to the Government Authority responsible for coordinating UNDP activities, in this case the Ministry of Foreign Affairs and Cooperation.

²⁷ In the case of multi-year projects, a specific work plan must be signed for each calendar year by the implementing partner and the UNDP.

XI. MANDATORY ANNEXES

- A. GHG emissions calculations
- B. Calculations of diesel savings and share of renewable energy in the BRT energy mix
- C. Multiyear Work plan
- D. Monitoring Plan
- E. Evaluation Plan
- F. GEF Tracking Tool (s) at baseline
- G. Terms of Reference for Project Steering Committee, National Project Coordinator, Chief Technical Advisor and other positions as appropriate
- H. UNDP Social and Environmental and Social Screening (SESP)
- I. Lettre D'accord Type Entre Le PNUD Et Le Ministère Délégué Chargé de L'Environnement Pour La Fourniture De Services D'appui

A. GHG emissions calculations

GHG emissions from diesel buses in 2015

Calculations based on diesel consumption data of 2015

Data		
Total number of buses		121
Km traveled		10 012 694
Reference year		2 015
Total number of riders		36 227 784
GHG Emissions Calculations		
	Long buses	Short Buses
Number of buses	8	113
Diesel consumption in l/100km	60	40
km total parcouru par type de bus (km)	661 996	9 350
Total Consumption (l)	397 198	3 740
Emission Factor - Diesel consumption (kg eq CO2/l)	2,68	2,68
Emissions	1 064 490	10 023
Total GHG emissions (teq CO2)		11 088

Direct emissions reductions

➤ 1 MW HCPV solar plant

Table below shows the data used for direct emissions reductions estimation:

Number of photovoltaic panels	50
Installed capacity (MW)	1
Electricity produced (MWh/year)	1 896
Emission factor of national grid (tCO2/MWh)	0,59
lifetime of HCPV panels	15

The formula used for the calculations is:

Direct emissions reductions over lifetime investments = Electricity produced (MWh/year) * Emission factor of national grid (tCO2/MWh) * lifetime investments

Based on this formula, direct emissions reductions over lifetime investments are estimated to **16,780 tCO2**.

➤ Eco-driving

Table below shows the data used for direct emissions reductions estimation:

Before introduction of BRT system	
Total number of bus	121
Total emissions in 2015 (tCO ₂)	11 150
After introduction of the BRT system	
	Bus of 12m
Number of buses in circulation after the introduction of BRT	82
Unit consumption (en l/100km)	60
Total of km traveled (km/year)	7 027 735
Total consumption (l)	2 811 094
Diesel emission factor (kg eq CO ₂ / l)	2,68
Total emissions of bus circulating after introduction of the BRT (tCO ₂ /an)	7 534
% reduction in emissions from eco-driving (%)	10%

The formula used is as follows:

Direct emissions reductions (tCO₂/year) = Total emissions of bus circulating after introduction of the BRT (tCO₂/an) * % reduction in emissions from eco-driving

The following assumptions were considered for the realization of calculations:

- The distance of unmodified lines will remain the same as before introduction of BRT system
- Unmodified lines consume the same amount of fuel
- The application of eco-driving practices induces a reduction of emissions of 10%
- At mid-term of the project, 50% of the diesel bus drivers have received training on eco-driving practices
- From the 3rd year of the project, all drivers apply eco-driving practices
- Lifetime investments = 15 years

Total direct emissions reductions over lifetime investments are estimated to 10,547 tCO₂.

➤ Total direct emissions reductions:

Based on the sub-total direct emissions from the 1 MW solar farm and eco-driving, the total direct emissions reductions are **27,327 tCO₂**.

Indirect emissions reductions

Two approaches were used:

Bottom-up analysis:

The GEF guidelines provide a formula for Bottom-Up (BU) emissions assessment as:

$$\text{CO2 indirect BU} = \text{CO2 direct} * \text{RF}$$

where CO2 direct is Direct emissions reductions over lifetime investments
and RF is a Replication Factor.

For 1MW HCPV solar plant, bottom-up calculations are based on a replication factor of 2 assuming that this project will be replicated in at least one other city. This leads to 33,559 tCO₂e.

For eco-driving, a replication factor of 4 has been considered. This leads to 42,189 tCO₂.

The total indirect emissions reductions based on the bottom-up approach are estimated to **75,748 tCO₂**.

Top-down analysis

The top-down approach is based on the following formula:

$$\text{CO2 indirect TD} = \text{P10} * \text{CF}$$

Where:

P10 is the technical and economic potential GHG savings with the respective application within 10 years after the project,

CF is GEF causality factor

For 1MW HCPV solar plant, top-down calculations are based on a CF of 60%. The project can be replicated in at least 3 other cities, thereby, P10 is estimated at 67,118 tCO₂. This leads to an indirect TD reduction of 40,271 tCO₂.

For eco-driving, a CF of 60% has been considered. Regarding P10, a great potential related to eco-driving is available. Major cities of Morocco can apply practices related to eco-driving. Based on this, P10 is estimated at 105,472 tCO₂ and indirect TD reductions to 63,283 tCO₂.

The total indirect emissions reductions based on the top-down approach are estimated to **103,554 tCO₂**.

Table below summarizes results obtained from calculations:

		1MW HCPV solar plant (tCO ₂)	Eco-driving (tCO ₂)	Total (tCO ₂)
Direct emissions		16,780	10,547	27,327
Indirect emissions	Bottom-up	33,559	42,189	75,748
	Top-down	40,271	63,283	103,554

B. CALCULATIONS OF DIESEL SAVINGS AND SHARE OF RENEWABLE ENERGY IN THE BRT ENERGY MIX

Data		
Total number of buses		121
Total traveled km		10 012 694
Reference year		2 015
Total number of travelers		36 227 784
Diesel consumption		
	Articulated buses (>12 m)	Buses 12 m long
Number of buses	8	113
Diesel consumption (L/100km)	60	40
km traveled by each type of buses (km)	661 996	9 350 698
Total diesel consumption for each type of buses	397 198	3 740 279
Total diesel consumed in 2015 (L)		4 137 476,86
Diesel spent budget for 2015 (based on a unit rate of 8,5 MAD)		35 168 553
Diesel spent budget for 2015 in USD (considering an exchange rate of 1 USD=9,5 MAD)		3 701 953
Diesel savings after introduction of the first 30 electrical buses (15 in the first two years)		
Diesel saved by discarding 15 buses - year 1 (L)		496 497
Budget saved by discarding 15 buses - year 1 (USD)		444 234
Budget saved by discarding 30 buses - year 2 (USD)		888 469
Budget saved by discarding 30 buses - year 3 (USD)		888 469
Budget saved by discarding 30 buses during project implementation (USD)		2 221 172
Budget saved by discarding 30 buses during 15 years lifetime investment (USD)		28 875 233
Percentage of the total energy derived from renewable sources of the public transport		
Total diesel consumption before integration low carbon BRT system (L)		4 137 476,86
Diesel consumption to be replaced by renewable energy (by end of project)		992 994
Percentage of the total energy derived from renewable sources of the public transport		24%

C. Multi Year Work Plan

Project Component	Year 1				Year 2			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outcome 1								
Output 1.1								
Output 1.2								
Output 1.3								
Outcome 2								
Output 2.1								
Output 2.2								
Outcome 3								
Output 3.1								
Output 3.2								
Output 3.3								

D. Monitoring Plan

The National Project Coordinator will collect results data according to the following monitoring plan.

Monitoring	Indicators	Description	Data source / Collection methods	Frequency	Responsible for data collection	Means of verification	Assumptions & Risks
Project Objective: To support the low-carbon integration of the Bus Rapid Transit (BRT) System under implementation by the City of Marrakech through the installation of 1 MW solar farm based on High Concentration Photovoltaic (HCPV) technology. The energy produced by the farm will help power electric buses to showcase an integrated low-carbon transport system that can be replicated in other cities in Morocco.	Extent of change in modern energy coverage by users and specific sectors (IRRF Indicator 1.5.2)	Share of renewable energy in the public bus transport system	Share of solar energy consumed by electrical buses (Kwh) in the overall energy mix of the bus transport system	Monthly & Annual aggregation	TLDC, ALSA, RADEEMA & National Project Coordinator	Electric meters	Integration of electrical buses in the BRT system powered by a 1 MW HCPV solar farm Risk: insufficient financial resources to ensure the procurement of electric trolleybuses and HCPV solar plant
	Direct number of daily beneficiaries of lines L1 and L2 of the public bus system	Assess the bus ridership by counting the number of users using lines L1 and L2 and disaggregating by gender	Field surveys Report of TLDC and ALSA	monthly & Annual aggregation	TLDC & ALSA	Reports of surveys	Electric buses integrated in the BRT system of Marrakech offers adequate means to count ridership Field surveys are conducted to disaggregate data by gender Risk: an increase in the bus ticket cost may reduce the attractiveness of the BRT system compared to other transport modes.
	Tons of incremental CO2 equivalent avoided as a direct result of project activities	Estimate the amount of GHG emissions avoided due to the integration of BRT system and application of eco-driving practices	MW produced by the solar farm Diesel fuel consumption by buses	Daily basis with monthly and annual aggregation	TLDC & ALSA	Monitoring Reports of TLDC and ALSA	Electric buses are integrated in the BRT system of Marrakech and powered from a 1 MW HCPV solar farm. Diesel buses drivers are trained on eco-driving practices. Risk: low productivity of the solar farm and eco-driving not adequately applied may not provide the expected GHG reductions
	Km of high capacity public transport system (BRT) per 100 000 population	Measure the ratio of BRT lanes length over the serviced	Engineering and construction reports	Annually	City of Marrakech and TLDC	Reports from TLDC	High political will from the City Council. The infrastructure of the first two BRT lines is available and the first set

Component/Outcome	population				Annually	City of Marrakech TLDC	Financial planning reports	of electrical buses will be available before COP22.
	Completion of financial planning documents for the future BRT lines (L3 and L4)	Financial planning of the future BRT lines are completed	Financial studies conducted for lines L3 & L4	Financial planning of the future BRT lines are completed				
Component/Outcome 1 Integrated planning, built capacities and MRV systems for the low carbon BRT System	Number of low carbon indicators in the MRV system	Establish adequate indicators to MRV sustainable and low carbon components	Reports from TLDC and ALSA MRV system	Reports from TLDC and ALSA MRV system	Annually	TLDC and ALSA	MRV reports	The TLDC incorporates an adequate MRV system The design of MRV system includes low carbon indicators, e.g. kwh produced from solar farm, diesel consumption, GHG emissions, etc. Risk: Lack of sufficient human resources to design and oversee the MRV system
	% of TLDC technical employees and bus drivers trained on the best practices of energy efficiency	Enhancing capacities of TLDC technical employees and bus drivers to intensify positive impacts of the project	Training reports	Training reports	Annually	TLDC and ALSA	Progress project reports Minutes of workshops, trainings, etc.	TLDC will receive the necessary support to be able to higher the necessary employees. Risk: Lack of engagement from TLDC/ALSA management to support the implementation of the capacity building activities..
	Amount of installed MW from the HCPV solar farm	Counting the total installed capacity from the HCPV solar farm	Commissioning and testing reports	Commissioning and testing reports	Annual	BOT company and TLDC	Technical reports	High polical will from the City of Marrakech to install a solar PV farm part of the BRT system. Risk: Lack of sufficient funding, delays in the construction and commissioning.
Component/ Outcome 2 Commissioning of 1 MW solar farm for powering of electric								

buses for BRT System	An O&M system is in place	Ensure the durability of solar energy production from the solar farm and allow the optimization and efficiency of preventive maintenance	Results of O&M activities	Annually	BOT company and TLDC	Reports on O&M activities	A firm tendering process and technical support provided from SIE and ADEREE will ensure that an experimented BOT company will be hired. Risk: delays in the implementation of the O&M system
Component/ Outcome 3 Knowledge management and awareness	Number of events organized to communicate Marrakech's sustainable urban transport experience	Communicate around the importance of the BRT system	Minutes of communication events	Annually	City of Marrakech and TLDC	Minutes of communication events	COP22 a major event to demonstrate the sustainable development engagement of Marrakech and communicate around the project. Risk: Lack of financial resources to organize several events to communicate around the BRT system
	Number of platforms (TV campaigns, ads, etc.) developed for public communication and awareness regarding low-carbon transport and solar energy	Measure the variety of platforms used to launch communication and awareness activities	Means used to communicate around the project	Annually	City of Marrakech TLDC National Project Coordinator	Means used to communicate around the project	The city of Marrakech is aware of the importance of using different platforms and media to reach out different types of beneficiaries. Lack of financial resources to use different platforms to communicate around the project
	Number of replication plans proposed by the multi-stakeholder committee for other cities	Evaluate the possibility of replication and propose replication plans for other cities	Replication plans proposed by the multi-stakeholder committee	Annually	Multi-stakeholder committee National Project Coordinator	Replication plans	The multi-stakeholder committee incorporates the preparation of replication plans in its activities. Risk: lack of political will to ensure replication.

Terminal GEF Tracking Tool	N/A	N/A	Standard Tracking Tool available at www.thegef.org Baseline Tracking Tool included in Annex D.	After final PIR submitted to GEF	National Project Coordinator	Completed GEF Tracking Tool	All necessary data will be gathered in a professional manner throughout the project duration to ensure a proper completion of the GEF Tracking Tool
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E. Evaluation Plan

Evaluation Title	Planned start date Month/year	Planned end date Month/year	Included in the Country Office Evaluation Plan	Budget for consultants	Other budget (i.e. travel, site visits etc...)	Budget for translation
Terminal Evaluation	June/2018	August/2018	Yes	30,000 USD	-	2,000
Total evaluation budget				USD		

F. GEF Tracking Tool (s) at baseline

See attached document

G. Terms of Reference for Project Steering Committee, National Project Coordinator

For the last two decades, Morocco has engaged in various climate change mitigation initiatives and programmes. Transportation is one of the targeted sectors given its high-energy consumption and the amount of GHG emissions it generates. Therefore, Morocco has set up a transportation policy that has among its objectives the urban transport's upgrading. Indeed, urban transport in the city of Marrakech shows weaknesses of the current system and dysfunctions related to the high utilization rate of other transport means, especially taxicabs and two-wheelers. For that matter, the present project foresees the support to the implementation an innovative Bus Rapid Transit (BRT) system by using electrical buses powered from a solar farm.

Morocco has sought the support of GEF through UNDP in order to achieve the following project's outcomes:

- Outcome 1: Marrakech city integrates low carbon transport in its municipal planning documents and ensures monitoring and reporting of implemented actions ;
- Outcome 2: Public capacities of Marrakech city are enhanced regarding low-carbon public transport and R&D is developed ;
- Outcome 3: The low carbon BRT system is made operational by an investment in a HCPV solar plant;
- Outcome 4: Capitalization, replication, communication and awareness.

1- National Project Coordinator

Responsibilities and duties:

The National Project Coordinator is responsible for coordinating and managing all aspects of the project implementation. Moreover, he is in charge of projects results and risks regular monitoring– especially social and environmental risks.

More specifically, he will be responsible of the following:

- Ensuring that project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting project's results ;
- Supervising and controlling the implemented activities under the project ;
- Ensure communication between the project's entities and inform the Project Steering Committee, the UNDP country office and the UNDP-GEF RTA of any delays or difficulties ;
- Ensuring the regular occurrence of risks monitoring and developed plans to support project implementation ;
- Monitoring the environmental and social risks and addressing social and environmental grievances with the collaboration of the UNDP country office ;
- Ensuring that the standard UNDP and GEF M&E requirements are fulfilled at the highest quality ;
- Ensuring that the results framework indicators are monitored annually ;
- Developing annual work plans according to the multi-year work plan included in Annex A ;
- Producing inception report ;
- Producing the project implementation reports (PIR) in collaboration with the other entities ;
- Updating the GEF tracking tool before the terminal evaluation ;
- Ensuring quality control of the project deliverables.

Required qualifications and experience:

The National Project Coordinator must justify the profile and the following skills:

- Minimum Diploma of a master's degree in environmental management major, energy, or any other field relevant to the project ;
- Minimum 10 years of professional experience;
- Significant experience in the development and implementation and / or planning of cooperation projects with international donors ;
- Confirmed technical skills in climate change mitigation ;
- Advanced knowledge of the transportation sector and the urban transport in Morocco and the national context of its evolution and its barriers ;

- An in-depth knowledge in the field of energetic efficiency and renewable energy;
- Proven skills and ability to plan, organize and implement activities ;
- Team coordination skills, mainly in complex environments, multi-stakeholders and multi-donors ;
- Proven skills in the design and implementation of participatory process in order to facilitate dialogue between different stakeholders ;
- Fluency in written and verbal communication ;
- Language proficiency in French, Arabic and English.

2- Project Steering Committee

The Project Steering Committee consists of the following institutions:

- United Nations Development Program (UNDP) ;
- Ministry of the environment (MdE) ;
- Municipality of Marrakech ;
- Wilaya of Marrakech-Safi ;
- LDC in charge of public transport ;
- Ministry of the interior (MI) – General direction of local authorities (DGCL) ;
- Ministry of foreign affairs and cooperation (MAEC) ;
- Energetic investments company (SIE) ;
- National agency for the development of the renewable energy and energy efficiency (ADEREE) ;
- Marrakech autonomous water and electricity distribution board (RADEEMA).

The Project Steering Committee's responsibilities are:

- Ensure that the project is focused on achieving the targeted results ;
- Approve and validate the necessary plans (institutional, strengthening, training, etc.) for the activities implementation ;
- Hold annual reviews to assess the performance of the project by evaluating the project financial results, ensuring coordination and harmonization of the approach and methodology agreed on, validating the planning for the following year, etc. ;
- Hold a final review to assess the results of the project and validate the expected outputs, to capture lessons learned and discuss scaling up opportunities.

H. UNDP Social and Environmental and Social Screening (SESP)

Project Information

Project Information	
1. Project Title	Renewable Energy for the City of Marrakech's Bus Rapid Transit System
2. Project Number	5890
3. Location (Global/Region/Country)	Morocco

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

All the planned actions included in the project are rooted in national priorities and policies focused on the human-rights based approach. The project supports the targets of the Intended Nationally Determined Contribution (INDC) submitted by Morocco in June 2015. The most prominent related strategies with which the project is aligned are the National Strategy for Sustainable Development (NSSD, 2014), the Moroccan Climate Change Policy (MCCP, 2014), the Green Morocco Plan (GMP), the Green Investment Plan (GIP, 2014), the Moroccan Solar Energy Programme (MSEP) and the Moroccan Wind Energy Project (MWEP). The overarching sustainable development strategy (NSSD) represents an operationalization of the Framework Law on the National Charter for Environment and Sustainable Development (Law 99-12), which is the supreme policy that sets the fundamental objectives of the State in terms of environmental protection and sustainable development. The country's progress in climate policy planning and institution building over recent years has been commendable. Its commitment towards a climate-compatible and low-carbon development pathway is mirrored in its institutional framework, as well as various mutually reinforcing national plans and international agreements.

In line with such initiatives, the City of Marrakech has been planning an upgrade of its public bus transport system in order to meet the needs of the growing local population and an increase in tourist visitors. This upgrade will have several benefits for the local population since the public transport coverage of suburban areas (which are the areas hosting the majority of the city's population, often represented by modest to low income families) will improve. A bus system with a large geographic coverage will help alleviate the social exclusion of populations living in such sub-urban areas. Moreover, improved accessibility to adequate transport will allow improved access to employment opportunities and other essential social components such as health and education facilities. Urban public transport generates far less traffic accidents than transport by individual cars or motorcycles, which are the current privileged modes of transport in Marrakech. Finally the clean energy provided by the solar plant will lead to green jobs and reduced air pollution.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

Recognizing the importance of gender equality, the Municipality of Marrakech has committed to foster gender mainstreaming in this project by quantifying and monitoring the number of direct beneficiaries disaggregated by gender. Women tend to choose their public transport means according to specific criteria, such as comfort and security. During the design phase of the Urban Transport Plan, safety and comfort aspects were considered as high priorities by the Municipality to ensure an optimal and equal utilization of the system by men and women. In this context, the BRT network was expanded to serve the suburbs that are presently less serviced by the actual bus system and less attractive to women especially for security reasons. Furthermore, the new buses will offer a great improvement in comfort and quality of service, which will meet the needs of not only women but also the needs of other vulnerable categories of beneficiaries such as the elderly, pregnant women and disabled people.

Mainstreaming gender and monitoring project results will be expressed in the gender-specific objective indicator-based on the number of project beneficiaries disaggregated by gender (see Annex A of the Request for Approval Form). Based on the estimated gender impact and level of gender mainstreaming set by UNDP, the project is considered gender targeted. The project addresses gender aspects and will significantly contribute to meeting the needs of the various above-mentioned social groups (women, elderly and disabled). Moreover, the project will aim to ensure that both women and men are provided equal opportunities to participate in and benefit from the project, without compromising the technical quality of the project results, in particular:

- Efforts will be made to promote participation of women in training activities, both at managerial and technical levels, as participants and facilitators;
- Gender-sensitive recruitment will be practiced at all levels where possible, especially in the selection of project staff;
- All decision-making processes will consider gender dimensions. At project management level, Project Steering Committee meetings will invite observers to ensure that gender dimensions are represented. At the level of project activity implementation, effort will be made to consult with stakeholders focusing on gender equality and women's empowerment issues;
- When data-collection or assessments are conducted as part of project implementation, sex-disaggregated data will be collected, for instance data related to male and female bus utilization ratio;
- Gender-sensitive language will be used in all communication and awareness activities.

Briefly describe in the space below how the Project mainstreams environmental sustainability

The project is a GEF-funded climate change mitigation project and therefore environmental sustainability is the core of the project objective – "To support the low-carbon integration of the Bus Rapid Transit (BRT) System under implementation by the City of Marrakech through the installation of 1 MW solar farm based on High Concentration Photovoltaics (HCPV) technology. The energy produced by the farm will help power electric buses to showcase an integrated low-carbon transport system that can be replicated in other cities in Morocco."

The key principle of HCPV is the use of cost-efficient and environmentally-friendly concentrating optics that dramatically reduce the cell area, allowing for the use of more high-efficiency cells and potentially a levelized cost of electricity (LCOE) competitive with Concentrated Solar Power and standard flat-plate PV technology in certain sunny areas with high Direct Normal Irradiance (DNI) (such as the case in Morocco).

Photovoltaic generators do require water to wash dust and dirt off of the front of modules, as cell efficiency is reduced when the modules are dirty. Fthenakis and Kim (2010B) estimate that the water use during PV and CPV plant operation is 15 L/MWh, and this estimated is corroborated for CPV by Hartsoch (2010). Schell (2009) estimates that CPV water usage during operation to be similar to be 7.2 L/MWh, with the value for non-concentrator PV as double the CPV value because of the larger module area requiring maintenance relative to CPV. Therefore from a water-usage perspective HCPV is among the best options compared to standard flat-plate PV technology.

Another environmental advantage of CPV is the decreased land demand for CPV systems with respect to non-concentrator, ground mounted PV systems is due to the high power conversion efficiency of CPV. CPV systems require more land per square meter of module area than non-concentrator PV due to spacing requirements imposed by the two-axis

tracking system, but this effect is more than offset by CPV's high power conversion efficiency, leading to lower overall land use.

Altogether HCPV is a low-risk and environmentally-sustainable renewable energy choice for a climate and context such as Marrakech.

The main expected environmental benefits of the project are related to reductions in greenhouse gas emissions and air pollution.

Direct GHG emissions reductions:

- **Installation of 1MW solar plant:** The solar power plant is based on the HCPV technology which is characterized by a capacity factor of 40%. The energy produced from the solar farm for the buses would otherwise have to be supplied by the national grid, which has an emission factor of 0.59 tCO₂ / MWh. The calculated direct emissions reductions from the 1 MW HCPV solar farm are estimated to 16,780 tCO₂. The detailed calculations are provided in Annex C.

- **Eco-driving:** even after the introduction of the BRT system, the public urban transport in the city of Marrakech will continue to use diesel fuelled buses. To reduce the diesel consumption of these buses, drivers will receive initial eco-driving trainings and the project will sustain such an initiative by supporting continuous eco-driving trainings. The application of eco-driving practices can provide a GHG emission reduction of 10% compared to current practices. The calculated direct emissions reductions from eco-driving are estimated to 10,547 tCO₂. The detailed calculations are provided in Annex C.

The total combined direct emissions reductions are estimated at 27,327 tCO₂ based on the lifetime investments of the project.

Overall the project's main GHG benefits are indirect, emanating from the pilot scale demonstration aspect, policy incentives, capacity development and institutional strengthening aspects of the project.

The direct global environmental benefits of the project include also reduced air pollution. Presently all the diesel buses connect at a hub station located near "Jamma Lafna" which generates significant air pollution at this high density tourist area due to emissions of air pollutants such as Particulate Matter (PM) and Nitrogen Dioxide (NO₂). By integrating the electrical BRT system, fewer diesel buses will have to access the center of the city for refuelling which will lead to an improvement of air quality.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses).</i>		QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i>		QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?	
Risk Description	Impact and Probability (1-5)	Significance (Low, Moderate, High)	Comments	Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.	
Risk 1: Construction of the solar plant and related infrastructure	I = 2 P = 2	Low	The project involves the construction of a 1 MW HCPV solar farm to be built and operated under a contract with	The design and construction of the plant will be done in conformity with all applicable national laws and regulations as noted above and if needed an environmental management plan will be developed (as part of the tendering documents)	

			<p>a private firm on a build-operate-transfer (BOT) contract and owned by the TLDC, a government parastatal. The site where the solar farm will be located has been identified at the far end of line L2 (West of Marrakech) near an electrical sub-station. The selected site belongs to the City of Marrakech and will also host the offices of the TLDC, a training center, and a maintenance center. No people are currently living on the site. The construction and operation of the plant will be done in conformity with applicable national environmental regulations and will be subject to all relevant required environmental approval and permits.</p> <p>High concentration photovoltaics (HCPV) systems employ concentrating optics consisting of dish reflectors or fresnel lenses that concentrate sunlight to intensities of 1,000 suns or more. The solar cells require high-capacity heat sinks to prevent thermal destruction and to manage temperature related electrical performance and life expectancy losses.</p>	<p>to mitigate any adverse impacts.</p> <p>The procurement process and BOT contract will be compliant with the current legal framework governing environmental and social assessment in Morocco, including:</p> <ul style="list-style-type: none"> - Law No. 11-03 governing environmental protection and development; - Law No. 12-03 governing environmental impact assessments, promulgated by Dahir No. 1-03-06 of 10 Rabii I 1424 (12 May 2003) defining the list of liable projects, the implementation procedure and the consistency of impact assessments; - Decree No. 2-04-564 of 5 Di Kaada 1429 (4 November 2008) defining the conditions for organizing and conducting a public survey on projects subject to environmental impact assessments. - The instrument published on 26 Safar 1431 (or 11 February 2010) and promulgated by Law No. 13-09 on renewable energies is aimed at instituting a legal framework that creates prospects for individuals or corporations from the public or private sectors to build and operate facilities that generate electricity from renewable sources. - Law No. 11-03 of June 2003 governing environmental protection and development; - Decree No. 2-97-787 of 6 Chaoual (4 February 1998) relating to water quality standards and its related orders; ESIA Executive Summary Page 6 - Law No. 28-00 of 7 December 2006 relating to waste management and disposal and its implementing decrees.
Risk 2: consumption of raw materials,	I = 2	Low	Life Cycle Assessment (LCA) enables us to take into account	By employing concentrating and tracking technologies,

<p>energy, and/or water</p>	<p>P = 3</p>	<p>the entire life cycle stages, from cradle to grave, in measuring environmental and resource sustainability. There has been continuous and remarkable progress in photovoltaic (PV) technologies during the last decade as investments in solar energy have increased. Economies of scale and improvements in material utilization and process and module efficiencies have contributed to drastic reductions in production costs and to lower environmental footprints.</p> <p>The solar plant targeted for construction by the project does consume energy, raw materials and water but much less than the BAU scenario (thermal generating plants). Studies have been done detailing the material and energy inventories in the life cycle of high-concentration PV systems, and, based on measured field-performances, evaluated their energy payback times, life cycle greenhouse gas emissions, and usage of land and water. Although operating high-concentration PV systems require considerable maintenance, their life cycle environmental burden is much lower than that of the flat-plate c-Si systems operating in the</p>	<p>concentrated photovoltaics (CPVs) lower the use of highly efficient but expensive photovoltaic (PV) materials, like III-V semiconductors, while achieving very high efficient energy conversion. As already mentioned the water and land requirements for HCPV technology are much less than CSP and normal PV plants and will be minimal for this plant.</p> <p>The exact ESIA requirements for the plant will be elaborated and defined during the first year of the project.</p>
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		same high-insolation regions.	
QUESTION 4: What is the overall Project risk categorization?			
Select one (see SESP for guidance)			Comments
Low Risk			<input type="checkbox"/>
Moderate Risk			<input checked="" type="checkbox"/>
High Risk			<input type="checkbox"/>
QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?			
Check all that apply			Comments
Principle 1: Human Rights			<input type="checkbox"/>
Principle 2: Gender Equality and Women's Empowerment			<input type="checkbox"/>
1. Biodiversity Conservation and Natural Resource Management			<input type="checkbox"/>
2. Climate Change Mitigation and Adaptation			<input type="checkbox"/>
3. Community Health, Safety and Working Conditions			<input checked="" type="checkbox"/>
			The project involves the construction of a 1 MW HCPV solar farm to be built and operated under a contract with a private firm on a build-operate-transfer (BOT) contract and owned by the TLDC, a government parastatal. The site where the solar farm will be located has been identified at the far end of line L2 (West of Marrakech) near an electrical sub-station. The selected site belongs to the City of Marrakech and will also host the offices of the TLDC, a training center, and a maintenance center. No people are currently living on the site. The construction and operation of the plant will be done in conformity with applicable national environmental regulations and will be subject to all relevant required environmental approval and permits.
4. Cultural Heritage			<input type="checkbox"/>
5. Displacement and Resettlement			<input type="checkbox"/>

	<p>6. Indigenous Peoples</p> <p>7. Pollution Prevention and Resource Efficiency</p>	<input type="checkbox"/>	<p>The current legal framework governing environmental and social assessment in Morocco comprises (but is not limited to):</p> <ul style="list-style-type: none"> - Law No. 11-03 governing environmental protection and development; - Law No. 12-03 governing environmental impact assessments, promulgated by Dahir No. 1-03-06 of 10 Rabii I 1424 (12 May 2003) defining the list of liable projects, the implementation procedure and the consistency of impact assessments; - Decree No. 2-04-564 of 5 Di Kaada 1429 (4 November 2008) defining the conditions for organizing and conducting a public survey on projects subject to environmental impact assessments. - The instrument published on 26 Safar 1431 (or 11 February 2010) and promulgated by Law No. 13-09 on renewable energies is aimed at instituting a legal framework that creates prospects for individuals or corporations from the public or private sectors to build and operate facilities that generate electricity from renewable sources. <p>The other main relevant laws applicable under this project are the following:</p> <ul style="list-style-type: none"> - Law No. 11-03 of June 2003 governing environmental protection and development; - Decree No. 2-97-787 of 6 Chaoual (4 February 1998) relating to water quality standards and its related orders; ESIA Executive Summary Page 6 - Law No. 28-00 of 7 December 2006 relating to waste management and disposal and its implementing decrees; <p>The design and construction of the plant will be done in conformity with all applicable national laws and regulations as noted above and if needed an environmental management plan will be developed (as part of the tendering documents)</p>
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		<p>to mitigate any adverse impacts. All waste management from the plant construction and operations will follow national standards. As with standard PV systems, CPV installations are typically warranted for at least 25 years, thus they have to be reliable. The standard IEC 62108 called "Concentrator photovoltaic (CPV) modules and assemblies - Design qualification and type approval" issued by the International Electrotechnical Commission (IEC) in 2007 is a mandatory step to enter the market. Today most companies have certified their products according to this standard. Please note that additional UL and IEC standards (e.g. for power and energy rating, module safety, tracker, optics, cell assembly) have been published or are under preparation.</p> <p>The tender and BOT processes for the HCPV plant will follow the same procedures as applied for other PV plants supported by the SIE in Morocco. It is assumed that for decommissioning, the energy inputs are determined from the installation stage. It is assumed that the dismantled components, except for the foundation, are shredded in a local scrap processor where recyclable metals are separated, and non-recyclable residues are sent to landfill facility.</p> <p>As already mentioned the water and land requirements for HCPV technology are much less than CSP and normal PV plants and will be minimal for this plant.</p>
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Final Sign Off

Signature	Date	Description
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the

PAC Chair		<p>QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.</p> <p>UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.</p>
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SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks	
Principles 1: Human Rights	Answer (Yes/No)
1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? ²⁸	No
3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5. Are there measures or mechanisms in place to respond to local community grievances?	Yes
6. Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
7. Is there a risk that rights-holders do not have the capacity to claim their rights?	No
8. Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
9. Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women's Empowerment	
1. Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3. Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
3. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below	

²⁸ Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management	
1.1 Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	No
1.2 Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3 Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4 Would Project activities pose risks to endangered species?	No
1.5 Would the Project pose a risk of introducing invasive alien species?	No
1.6 Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7 Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8 Does the Project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	No
1.9 Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10 Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11 Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i>	No
Standard 2: Climate Change Mitigation and Adaptation	
2.1 Will the proposed Project result in significant ²⁹ greenhouse gas emissions or may exacerbate climate change?	No
2.2 Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	No
2.3 Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No

²⁹ In regards to CO₂, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

Standard 3: Community Health, Safety and Working Conditions	
3.1 Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2 Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.3 Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	Yes
3.4 Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5 Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6 Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7 Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8 Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9 Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage	
4.1 Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2 Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement	
5.1 Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2 Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3 Is there a risk that the Project would lead to forced evictions? ³⁰	No
5.4 Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples	

³⁰ Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the rights, lands and territories of indigenous peoples (regardless of whether Indigenous Peoples possess the legal titles to such areas)?	No
6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.4	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.5	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.6	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.7	Would the Project potentially affect the traditional livelihoods, physical and cultural survival of indigenous peoples?	No
6.8	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	Yes
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i>	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	Yes