

2019

Project Implementation Review (PIR)

**Solar Photovoltaic Energy**

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# Basic Data

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| **Project Information** | |
| UNDP PIMS ID | 5137 |
| GEF ID | 5063 |
| Title | Catalysing the Use of Solar Photovoltaic Energy |
| Country(ies) | Iraq, Iraq |
| UNDP-GEF Technical Team | Energy, Infrastructure, Transport and Technology |
| Project Implementing Partner | IRQ10 (Iraq) |
| Joint Agencies | *(not set or not applicable)* |
| Project Type | Full Size |

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| **Project Description** |
| Iraq is highly dependent on fossil fuels to generate power which, despite recent improvements, does not meet peak demand. Private diesel power generation has grown significantly to meet the gap. Fuel used for domestic power generation denies Iraq the opportunity to export that fuel. The project will catalyse the adoption of solar power in Iraq, both on and off-grid, to: a) reduce Iraq's dependence on fossil fuel; b) result in direct GHG reductions of approximately 741,622 tonnes CO2; and c) help provide reliable power to the Iraqi people to support development and a better standard of living.    The project targets residential-scale units (a few kilowatts) as well are utility-scale units (several megawatts). The project aims to facilitate the installation of 5 MW in aggregate of residential-scale PV generation capacity through the Bytti residential development in Najaf, Iraq. The project also aims to support the Iraqi Ministry of Electricity in the establishment of large, utility-scale PV plants, primarily by providing technical and investment support. The project supports the development of a regulatory framework, technical guidelines, capacity building, and institutional arrangements for the development of public and private (Independent Power Producer, IPP) solar power plants.    The project's National Focal Point is the Ministry of Environment. The project will receive close collaboration from the Ministry of Electricity, the Renewable Energy Research Centre of the Ministry of Science and Technology, and others. The project is expected to last 48 months. |

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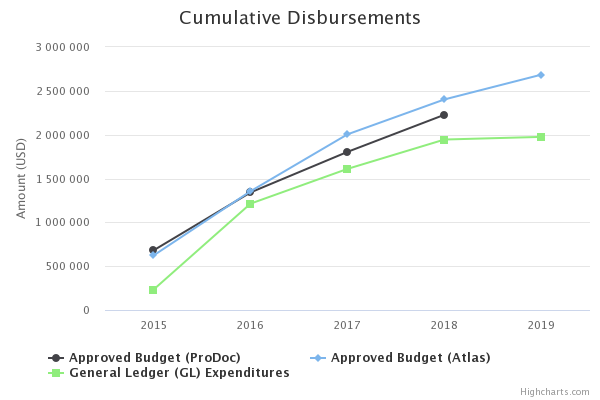
# Overall Ratings

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| Overall DO Rating | Satisfactory |
| Overall IP Rating | Satisfactory |
| Overall Risk Rating | Substantial |

# Development Progress

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| **Description** | | | | | | |
| **Objective**  **To reduce GHG emissions in Iraq by demonstrating and catalysing the application of distributed solar power to meet the energy needs of offices, small businesses, residences and small town services (small-scale distributed solar PV power plants and utility scale plants, on and off-grid).** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| Amount of reduced CO2 emissions by the investments facilitated by the project.  Total electricity generation by the project (MWh). | 0 | *(not set or not applicable)* | Installations in place and operating to achieve direct reduction of 741,622 tonnes CO2 over a 20-year lifetime from project start.  Indirect: Mechanisms in place to support the further expansion of PV installations to result in indirect emissions reductions of 5.9 million tonnes CO2. | The project has successfully completed and has rendered continued monitoring and support to all the solar installations in Baitty and in Al Monsour which has generated a cumulative amount of 63 MWh of clean electricity by the end of June 2018.  In October 2017 the Ministry of Electricity (MoE) successfully installed 1 MW rooftop solar installation at its headquarters and 500 kW off grid solar PV installations have been installed by private sector company, Al Traib Clean Energy company. These installations served local communities and telecommunication facilities. During the duration of the project, MoST has implemented three solar energy projects with 80 solar heaters, 25 kW hybrid wind/solar installations and 24 kW on grid solar unit. The total estimates of the above-mentioned activities adds up to 1723 tonnes of CO2 reduction until the end of June 2018.  At the utility scale level, the project continued to support the GoI including the Prime Minister´s Advisory Committee (PMAC) and MoE through capacity building and advocacy to achieve the national plan of installing 2000 MW solar PV plants by 2020. During the reporting period MoE signed 970 MW. Regarding the distributed PV installations, the project supported local providers in expanding their off-grid business in Iraq. The allocated off-grid solar PV installations was 500 kW since the start of the project. Among the distributed PV scheme in Iraq, MoST established 80 solar heaters to replace 69 conventional electrical heaters in their facilities during the age of the project. Moreover, 25 kW of solar/wind hybrid installations were installed at the premises of the Ministry of Science and Technology (MoST), that has the potential of saving 51.1 MWh annually. | Project continued to provide technical oversight and monitoring of the solar installations implemented by the project including the solar PV pilot installations in Bayti Housing Complex and Al Mansour Factory. The solar installations has been successfully operational since June 2016 and generating a cumulative generation of 94 MWh by the end of June 2019.    In 2019, MoE has in addition to the 1 MW solar PV installations at its headquarters added another a 100 kW solar PV installation for awareness and training purpose in the Training and Development Directorate.    The private sector installations in Iraq has been reported to increase by 1.5 MW during 2019 with a total accumulative figure of 2 MW. The RE companies are mainly located in Baghdad and Erbil. However, the installations serve the purpose to supply energy to rural communities, telecommunications, irrigation systems and roof top units across Iraq.    In addition to the previously reported installations in MoHESR (80 solar heaters, 25 kW hybrid wind/solar installations and 24 kW on grid solar unit) another 35 kW solar PV installation was implemented during 2019.    Mapping of the local academic sector in 2019 identified a number of installations mainly in the colleges and institutes under the umbrella of the Middle Technical University. The accumulated installed capacity is above 500 kW and is planned to be scaled up to 1 MW in the near future.    The total estimates of the above-mentioned activities adds up to a 4432 tonnes of CO2 reduction until the end of June 2019.    MoE mobilized actions to establish partnership with the private sector to install 2000 MW in the form of PPA contracts. However, during the contractual process the plan faced difficulties and the project has supported the MoE with PPA best practices and policy documents to support MoE in attracting private sector investment. In May 2019, MoE initiated a new process and announced Expression of Interest (EoI) for the private sector to implement 450 MW of solar PV capacity through PPA contracts.    The governmental programme for 2018-2020 presented by the new government of Iraq (GoI) included a plan to install 2000 MW at a level of 500 MW per year. Furthermore, the governmental plan instructed the various ministries and institutions to install roof top solar PV installations in their premises in cooperation with Al Zawraa State Company (which is a public company that manufactures solar PV panels and implements solar installations).    A midterm evaluation report (MTER) was finalized in July 2018 and with nine recommendations. The recommendations aimed mostly towards changes in the log-frame based on the new context in Iraq. The project steering committee reviewed the recommendations from the MTER and recommended for immediate implementation.    Recommendation 1 was regarding the project objectives, the project design has envisaged establishment of 16 ‘Utility Scale’ solar PV as demonstration units. The MTER suggested that the target for installation and operation of utility-scale PV plants be changed to 4 taking into account the dramatic changes from the unforeseen conflicts and economic crisis in Iraq.    In line with recommendation 1, it was recommended that for the project objectives, the targeted direct GHG emission reduction be changed to 160,000 tons of CO2 (from 741,622 tons of CO2).    The MTER also recommended that the reference to Bayti complex in the log-frame to be dropped. Instead the log-frame should include taking into account nationwide GHG reduction and performance evaluation of solar PV installations. Along that line the project has since project start aimed towards leveraging Bayti experience for promotion of RE on a national level and share the information through a series of events that were organized to promote the solar PV energy. |
| **The progress of the objective can be described as:** | | **On track** | | | | |
| **Outcome 1**  **Investment in solar photovoltaic power technologies for distributed electricity generation for office, residential, small business and small town application.** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| Megawatts of solar PV installed. | 0 | *(not set or not applicable)* | Installation and operation of 5 MW of distributed, grid-connected PV at Bytti.  Installation and operation of 16 utility-scale PV plants.  Monitoring and recording operational data from all Bytti and the 16 plants to inform the development of future PV plants. | Successful pilot installations at Baytti provided practical lessons, technical skills and insights to the developer of Baytti residential complex project, Al Shafie group and these are critically important to mobilize actions to fulfill their commitments to their clients and the local authorities to fulfill their commitments of 5 MW distributed, grid-connected PV.  While Iraq’s political turmoil and ongoing economic crisis are understandably attributed as reasons for the delay in the completion of Baitty real state project, the project has managed to bring attention of the top authorities to put in place strong oversight and create enabling condition to implementation of the 5 MW grid connected solar PV plan. The project also organised consultation meetings with head of departments and technical staff including the investment commission in Najaf and the Department of Electricity in Najaf.  Effort for removal of barriers that solar energy projects are facing included exposure visits for Iraqi decision makers to Morocco, Egypt and Jordan. These visits served to sensitize the GoI on the successful practices in RE and provided new insights to Iraqi decision makers about the significant growth in the share of RE in energy markets as well as energy mix in these countries. One of the main solar energy development barriers in Iraq is the lack of a national supportive legislation. A draft for RE has been crafted by the project in consultation with the legal and technical experts in cooperation with the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE). The draft law is currently under review by PMAC and MoE.  A series of technical reports on policies, regulations and best practices were prepared by the project in cooperation with RCREEE. The documents have been widely circulated among decision makers and national partners. Advocacy is currently underway to adapt the global best practices to the Iraqi context. Concerned government officials in Najaf were exposed to a site visit to Bytti project in Najaf and sensitized on the barriers facing the Baytti 5 MW solar PV plan.    Due to the global oil price collapse which had an adverse impact on Iraqi economy, coupled with heavy state expenditure in fighting involving ISIS, most national development plans including RE projects were temporarily seized for the last few years. However, GoI succeeded in its alternative approach to attract the private sector investment in RE projects instead of its earlier plan to fund such projects through the federal budget. As a result, a number of RE projects with total power generation of over 970 MW have been signed with private sector companies through IPPs. The plan is to scale up the capacity up to 2000 MW by the year 2020.      The PV units in Bytti are monitored online and the data is documented on hourly, daily, monthly and annual basis. The access to the online monitoring and the documented data has been shared with the relevant stakeholders. Beside the online monitoring and recording the PV units in Bytti have been visited on a weekly basis by the appointed solar engineer. Similarly, the PV unit in Al Mansour Factory has been visited every month in addition to the continued online monitoring. The site visits to the PV units have also served as capacity building measures for the direct beneficiaries in O&M and security checks. The weekly visits have ensured preventive measures and security checks of the equipment as well as instant interventions whenever needed.    As a result of increased capacity of power generation, the number of hours of load shedding has reduced in Iraq. With the improvement of grid availability, the efficiency of the grid-connected solar PV units has increased during daytime by 20-30 % resulting in an increase in electricity production from the solar PV installation by 15-20%.    Based on the steering committee decision the project had earlier provided Al Mansour Factory with a 5kW solar PV installation that uses CGIS technology which is highly efficient in high temperatures and a high quality SMA inverter. In the reporting period the project provided Al Mansour Factory with a second inverter identical to the inverter provided earlier in the 5 kW PV installation. The second inverter will be powered by the locally assembled solar PV panels in Al Mansour, thus enabling comparisons to be made with the CGIS technology.  Local capacity building in Bytti and Al Mansour for staff of the relevant ministries, Bytti project staff, NGOs and others has been made possible by raising awareness of the local beneficiaries and stakeholders through workshops, consultation meetings and presentations on the technical and economic feasibility of the solar PV installations.    With 1 year of production data for Al Mansour, MoST prepared a report on the efficiency of the PV unit. The main findings showed evidence that the productivity of the solar PV installation in Al Mansour Factory had 80 % efficiency compared to simulated production data. Further improvements could be made with changing the tilt angel of solar panels twice a year, setting up a timetable for cleaning the solar panels and solving the interruption of the grid through cooperation with the Electricity Distribution Department in the area. The cost per kWh from the solar PV installation proved to be economically feasible for electricity consumers with a high electricity consumption per month in the residential, government and industrial sectors. An important recommendation in the report is that the solar PV installation needs to be subjected to a continuous performance evaluation for at least 2 more years. In the short term the report recommends promoting the use of photo-voltaic solar systems associated with the small local network, which does not require enactment of new laws. Over the longer term, due legislation needs to be passed accompanied by the issuance of instructions and guidelines for the network codes and power purchase agreements from independent solar energy producers. | The 5 MW solar PV plan in Bayti is planned to be implemented as soon as the main infrastructure is completed, the project organized consultation meetings with local authorities to address the barriers and overcome the economic crisis which Iraq faced from 2014 and onward, affecting the private sector on a big scale. In 2019, the infrastructure work resumed and the solar PV plan is being discussed on technical issues. Many technologies have been developed for the past several years and the technical capacity to keep up in Bayti is very limited. Bayti Housing Complex has been continuously supported with technical advice on the way forward on their 5 MW rooftop solar PV plan.    Bayti housing complex has also been used as an evidential example for solar installations through organizing site visits and training on the solar PV installations provided by the project. The installations have been online and in operation for 3 years, resisting the harsh environmental conditions in the desert of Najaf.    The regional cooperation with (Jordan Renewable Energy & Energy Efficiency Fund) JREEF, UNDP-Jordan, Regional Center for Renewable Energy and Energy Efficiency (RCREEE), UNDP-Morocco, Moroccan Agency for Sustainable Energy (Masen) and UNDP-Egypt sensitized high level decision makers on the regional best practices in renewable energy. Exposure visits provided new insights to Iraqi decision makers about the significant growth in the share of RE in energy markets as well as energy mix in these countries. The outcomes of those visits have been followed up in 2019 with PMAC, MoHEn, MoST, MoE and MoI to utilize the knowledge from the regional countries best practices.    Efforts by the project aimed to remove one of main barriers in the solar energy process is the drafting of a RE law that has been endorsed by the National Committee for Renewable Energy headed by the Prime Minister Advisory Committee (PMAC) and sent to the legislation authority (Shoura Council).    Lessons from the past initiatives by the MoE emphasizes the need for scaled up support for PPA for the MoE in order to have a partnership with the private sector in a pragmatic way.    The project in cooperation with RCREEE provided the MoE with best practices and guidelines for Power Purchase Agreements. The EoI for 450 MW of solar PV announced in 2019 took into account the guidelines and the emphasis of the need for a prequalification process. The project succeeded to provide MoE with policies, regulations and guidelines for schemes such as Feed-In-Tariff, Net-metering and fiscal incentives which is needed to support the GoI in the expansion of a solar energy market in Iraq. Targeted advocacy continued by the project leveraging international best practice models.    Site visits to solar PV installations in Bayti Housing Complex aimed to expose ministry representatives, local authorities, universities, NGOs and private sector entities as part of sensitization and awareness campaigns. In addition to workshops, consultation meetings and presentations on the technical and economic feasibility of the solar PV installations in Bayti.    The solar PV installations in Bayti and Al Mansour have been continuously monitored from June 2016 to June 2019 and will continue by the project until December 2019. Generation data is documented on hourly, daily, monthly and annual basis to be further analyzed in reports to support the efficiency of solar PV installations in Iraq. The access to the online monitoring and the documented data has been shared with the relevant stakeholders. In addition to the online monitoring and recording, the PV units in Bytti have been visited on a weekly basis by the appointed solar engineer, similarly, the PV unit in Al Mansour Factory has been visited every month.    The site visits to the PV units have also served as capacity building measures for the direct beneficiaries in O&M and security checks. The weekly visits have ensured preventive measures and security checks of the equipment as well as instant interventions whenever needed. The above-mentioned efforts were continued during the reporting period up to June 2019.    At times with improved grid availability, the efficiency of the grid-connected solar PV units increased during daytime resulting in an increase in electricity production from the solar PV installation. This result highlights the need of a stable grid to be able to utilize grid connected solar PV installations.    Based on the steering committee decision the project had earlier provided Al Mansour Factory with a 5kW solar PV installation that uses CGIS technology, which is highly efficient in high temperatures and a high quality SMA inverter. In addition, the project provided Al Mansour Factory with a second inverter identical to the inverter provided earlier in the 5 kW PV installation. In October 2018, the second inverter was connected with locally assembled solar PV panels in Al Mansour, thus enabling comparisons to be made with the CGIS technology. The locally assembled solar PV panels are generating electricity almost at the same rate as the CIGS panels and thus proving the quality of Al Mansour solar panels.    Based on 1 year of production data from Al Mansour solar PV installation, MoST prepared a report on the efficiency of the PV unit. The main findings showed evidence that the productivity of the solar PV installation in Al Mansour Factory had 80% efficiency compared to simulated production data. Further improvements could be made with changing the tilt angel of solar panels twice a year, setting up a timetable for cleaning the solar panels and solving the interruption of the grid through cooperation with the Electricity Distribution Department in the area. The cost per kWh from the solar PV installation proved to be economically feasible for electricity consumers with a high electricity consumption per month in the residential, government and industrial sectors. An important recommendation in the report is that the solar PV installation needs to be subjected to a continuous performance evaluation for at least 2 more years. In the short term, the report recommends promoting the use of photo-voltaic solar systems associated with the small local network, which does not require enactment of new laws. Over the longer term, due legislation needs to be passed accompanied by the issuance of instructions and guidelines for the network codes and power purchase agreements from independent solar energy producers. Data has been collected for a second yearly report which is due in July 2019. |
| **The progress of the objective can be described as:** | | **On track** | | | | |
| **Outcome 2**  **Encouragement of investments in solar power technology in Iraq and consumer uptake of solar appliances through policy reform and financial incentives.** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| Existence of RE policies and laws encouraging deployment.    Existence of a clear set of regulations and technical and regulatory requirements for connecting to the grid.    Volume of investments mobilised for solar PV power. | There have been early-stage discussions between MoE and UNDP on net-metering. There have been no concrete steps or commitments. | *(not set or not applicable)* | Development and implementation of a grid code for distribution and transmission (for small-scale distributed generation and larger utility-scale generation).  Design and implementation of a process for IPPs to engage in standardized PPAs with the Ministry of Electricity, to acquire generation licences and to inter-connect with the grid.  Development of model contracts for power purchase agreements.  Implementation of phased fiscal incentives for PV uptake, including partial removal of import taxes on solar panels.  Design of a feed-in tariff for renewable energy IPPs with appropriate pricing calibration, geographical zoning and regression schedule, and packaged as a NAMA.  Evaluation of net-metering options for industrial and residential applications.  Evaluation of a range of policies for specific circumstances, such as tenders for large solar installations (suitable for Iraq’s environment).  Support to implementation of the feed-in tariff and/or net-metering scheme. | The project prepared, in consultation with Iraqi experts and RCREEE a Renewable Energy Grid Code specially tailored for the Iraqi context. The code was discussed extensively with PMAC, MoE and other relevant authorities and stakeholders through bilateral consultation and workshops held in Baghdad and Amman. The code has been reviewed Iraqi engineers and experts nominated by the MOE. The project has manged to sensitize the higher authority and official order was issued to MOE for effective implementation of the grid code. In response to the request from PMAC, MoE established a special committee to review the draft grid code and recommended road map for implementation.  In addition to the code the project succeeded to draft a set of documents on policy, regulations and best practises relating to the various aspects of RE applications including feed in tariff, net metering and fiscal incentives.  For the first time ever an Iraqi RE law was drafted by the project which is now under revision by MoE. The project sought further support from PMAC to fast track the process of finalizing the draft RE law. The draft is expected to be sent to the parliament through the Iraqi cabinet when finalized by MoE.  Further capacity development efforts have been conducted for the Iraqi officials to support and establish a transparent and attractive process for IPP engagement. A series of exposure visits of the key decision makers in Iraq was organised as part of South-South Cooperation to Morocco, Egypt and Jordan. In addition to that, workshops and events where held locally within the country and abroad targeting technical staff from various ministries, private sector, academic institutes and NGO´s. The participants gained knowledge on how to bridge the gaps of the current PPA process. The project, in cooperation with RCREEE, provided MoE with PPA models from the region to guide the relevant departments in MoE in preparation of a transparent, clear and comprehensive PPA process.    With an objective to complete registration of a FiT NAMA in the UNFCCC NAMA registry, the project continued to build the capacity of the Ministry of Health and Environment (MoHEn) to promote climate mitigation and preparation for climate financing. During the reporting period, the project facilitated the necessary training on NAMA and to ensure wider discussions on the draft NAMA Roadmap involving the key stakeholders, experts, academia and civil society organizations. Attention was paid to enhance knowledge and understanding on NAMA registry as well as to clarify the roles of NAMA developers and NAMA approvers. The project facilitated stronger inter-ministerial collaboration between the ministries of environment and electricity respectively to work together and create conditions for Iraq’s registration of FiT NAMA in the UNFCCC NAMA registry with a credit buyer. The experience of Malaysian FiT NAMA was discussed and reviewed as a model. Led by the MoHEn, a government-wide approach was followed for NAMA process in Iraq which involves climate relevant ministries including the Ministry of Oil, Ministry of Industry, Ministry of Transportation, Ministry of Housing and Construction, Ministry of Higher Education, Ministry of Agriculture, and the Environmental Commission in the Kurdistan region. The project provided technical support and guidance for the Iraqi delegation to organize side events during COP in Morocco where Iraqi climate experts and officials were exposed to innovations, best-practice solutions, the emerging carbon markets and potential investors gathered during the global event.  Linked with the ongoing initiative on NAMA and climate financing, the project organized two technical meetings during the reporting period to sensitize and bring the counterparts and stakeholders together to discuss and prepare for Iraq’s access to innovative climate financing. The Government of Iraq has been supported to formulate its country readiness program for accessing GCF (Green Climate Fund) opportunities. To this end, a formal proposal has been formally submitted to GCF Secretariat by the country GCF focal point. This effort will help Iraq to accomplish a range of nationally driven activities over the next two years that will help prepare the country for constructive engagement and effectively utilization of GCF resources.    The project has supported the local government of Basra to include solar energy in their Provincial Development Strategy for the years 2017-2021. The local governments of Misan, Muthana, and Qadisiya were encouraged to follow a similar approach in their respective strategies. The Ministry of Planning intends to replicate these strategies in the remaining Governorates of Iraq.    Schemes for net-metering and feed- in tariff have been drafted by the project and shared with MoE. Extensive discussions were held with MoE on the applicability of above mentioned schemes taking into consideration the current instability of the grid in Iraq.    As explained in the earlier sections, the evaluation of existing policies and strategies including tendering of large scale installations has been part of the overall initiative for developing a model PPA for Iraq under the project. The project seized the opportunity to evaluate the PPAs signed by the MoE for the large scale solar plant in Muthana. The deeper knowledge and understanding of this evaluation are leveraged in the development of a tender model suitable for Iraq´s investment environment. | In 2019, the legislation, policy and technical reports where followed up for dissemination and to support endorsement from the GoI. This includes a Renewable Energy Grid Code, which was especially tailored for the Iraqi context and prepared in consultation with Iraqi experts and RCREEE. The code was discussed extensively with PMAC, MoE and other relevant authorities and stakeholders through bilateral consultation and workshops held in Baghdad and Amman. The code has been reviewed by Iraqi engineers and experts nominated by the MoE. The project also managed to sensitize the higher authority and an official order from PMAC was issued to MoE for effective implementation of the grid code. In response to the request from PMAC, MoE established a special committee to review the draft grid code and recommended a road map for implementation.    In addition to the code, the project succeeded to draft a set of documents on policy, regulations and best practices relating to the various aspects of RE applications including feed in tariff, net metering and fiscal incentives. These documents have been appreciated by a number of stakeholders and in 2019 a number of requests where received from regional organizations, NGOs, private sector, CSOs, etc. on further details regarding these documents.    Efforts by the project aimed to remove one of main barriers in the solar energy process is the drafting of a RE law that has been endorsed by the National Committee for Renewable Energy headed by the Prime Minister Advisory Committee (PMAC) and sent to the legislation authority (Shoura Council) in March 2019. The project sought further support from PMAC to fast track the process of finalizing the draft RE law. The draft is expected to be sent to the parliament through the Iraqi cabinet.    Further capacity development efforts have been conducted for the Iraqi officials to support and establish a transparent and attractive process for IPP engagement. A series of exposure visits of the key decision makers in Iraq was organised as part of South-South Cooperation to Morocco, Egypt and Jordan. In addition to that, workshops and events where held locally within the country and abroad targeting technical staff from various ministries, private sector, academic institutes and NGOs. The participants gained knowledge on how to bridge the gaps of the current PPA process. The project, in cooperation with RCREEE, provided MoE with PPA models from the region to guide the relevant departments in MoE in preparation of a transparent, clear and comprehensive PPA process.    During 2019 the project supported other projects with NAMA information as a national plan that can be used in a country programme for Iraq that will include mitigation projects in line with national priorities. With an objective to complete registration of a FiT NAMA in the UNFCCC NAMA registry, the project continued to build the capacity of the MoHEn to promote climate mitigation and preparation for climate financing. The project facilitated the necessary training on NAMA and to ensure wider discussions on the draft NAMA Roadmap involving the key stakeholders, experts, academia and civil society organizations. Attention was paid to enhance knowledge and understanding on NAMA registry as well as to clarify the roles of NAMA developers and NAMA approvers. The project facilitated stronger inter-ministerial collaboration between the ministries of environment and electricity respectively to work together and create conditions for Iraq’s registration of FiT NAMA in the UNFCCC NAMA registry with a credit buyer. The experience of Malaysian FiT NAMA was discussed and reviewed as a model. Led by the MoHEn, a government-wide approach was followed for NAMA process in Iraq which involves climate relevant ministries including the Ministry of Oil, Ministry of Industry, Ministry of Transportation, Ministry of Housing and Construction, MoHESR, Ministry of Agriculture, and the Environmental Commission in the Kurdistan region. The project provided technical support and guidance for the Iraqi delegation to organize side events during COP in Morocco where Iraqi climate experts and officials were exposed to innovations, best-practice solutions, the emerging carbon markets and potential investors gathered during the global event.    Linked with the ongoing initiative on NAMA and climate financing, the project organized two technical meetings during the reporting period to sensitize and bring the counterparts and stakeholders together to discuss and prepare for Iraq’s access to innovative climate financing. The Government of Iraq has been supported to formulate its country readiness program for accessing GCF (Green Climate Fund) opportunities. To this end, a formal proposal has been formally submitted to GCF Secretariat by the country GCF focal point. This effort will help Iraq to accomplish a range of nationally driven activities over the next two years that will help prepare the country for constructive engagement and effective utilization of GCF resources.    The project has supported the local government of Basra to include solar energy in its Provincial Development Strategy for the years 2017-2021. The local governments of Misan, Muthana, and Qadisiya were encouraged to follow a similar approach in their respective strategies. The Ministry of Planning intends to replicate these strategies in the remaining Governorates of Iraq.    Schemes for net-metering and feed- in tariff have been drafted by the project and shared with MoE. Extensive discussions were held with MoE on the applicability of above-mentioned schemes taking into consideration the current instability of the grid in Iraq. In 2019, MoE approved new smart meters in their distribution grid to replace the previous analog energy meters, however net-metering and feed-in tariff is still not an option and needs further legislation, technical and regulatory support.    As explained in the earlier sections, the evaluation of existing policies and strategies including tendering of large-scale installations has been part of the overall initiative for developing a model PPA for Iraq under the project. The project seized the opportunity to evaluate the PPAs signed by the MoE for the large-scale solar plant in Muthana. The deeper knowledge and understanding of this evaluation are leveraged in the development of a tender model suitable for Iraqs investment environment. The - deadline for the EoI for 450 MW solar capacity was 30th June 2019 and MoE will be supported in the coming phases of the contractual process. |
| **The progress of the objective can be described as:** | | **On track** | | | | |
| **Outcome 3**  **Facilitation of private sector capacity for technology development, innovation and servicing in the solar power industry, through technical capacity building and domestic market analysis.** | | | | | | |
| **Description of Indicator** | **Baseline Level** | **Midterm target level** | **End of project target level** | **Level at 30 June 2018** | **Cumulative progress since project start** |
| Number of individuals and organisations capable of supporting activity in the Iraqi solar market.    Records of PV market prices, participants and installed capacity to track development of solar PV in Iraq. | No effective capacity building exists for the industry. There are few industry players.    No significant market data exist. | *(not set or not applicable)* | Solar power market demand/industry response strategy developed for Iraq, informed by case studies from other countries with developed solar power industries, domestic market analysis, and clarification of Iraqi private sector opportunities for distributed solar PV power production. Iraq private sector and Government agencies exposed to all aspects of the industry (technology development, supply, servicing, financing).  Development and delivery of certified technical training on solar PV technologies (hybridization, supply, service) for emerging private sector companies. | The project has successfully completed a comprehensive study which included assessment of the market demand of solar power, industry response strategy, and domestic market analysis. Based on the key findings of the study, discussions are underway with RCREEE to collaborate in the preparation of a draft RE programme in consultation with MoE and other official authorities. Representatives of small and local IPPs such as Al-Traib Company, have been consulted to identify the current barriers and possible actions in order to remove the obstacles. Lessons learned from the region including Morocco, Egypt and Jordon, are being leveraged in the process.    The project has mobilized actions to assess and identify national and regional partners in the field of academic and vocational training in Solar PV. A plan has been finalized and actions underway to perform the following activities in partnership with the RCREEE:  I. Organization of a knowledge exchange mission with the selected regional institution  II. Proposal of PV training materials covering the full life-cycle of solar investment (site and equipment selection, financing, generation and inter-connection, operations and maintenance, etc.)  III. Design a qualified training and certification process for PV | The project mapped out in 2019 the capacity of the academic sector and put effort into exploring the capacity of RE academic training within the technical institute and technical college in Iraq. Consultations and discussions were held with a number of stakeholders including:  1. Higher education committee in the Iraqi parliament  2. Renewable Energy Directorate in MoHESR  3. Baghdad RE and Sustainability Center (BRESC)  4. The College of Energy and Environment Science, Al-Karkh University of Science  5. College of Engineering, Baghdad University.  6. The Technical College – Baghdad, the Central Technical University.  7. The Technical Institute – Baghdad, the Central Technical University.  8. The Directorate of RE, MoST  9. Al Zawra State Company, Ministry of Industry and Minerals.  10. Baquba Technical Institute  11. Kut Technical Institute  12. Dora Technical Institute  13. Middle Technical University in Baghdad  14. Diyala Governor  15. Al Mansour solar panel factory    A draft agreement was prepared by the project on the academic and vocational training related to RE among the following parties:  1. College of Engineering, Baghdad University.  2. The Technical College – Baghdad, the Central Technical University.  3. The Technical Institute – Baghdad, the Central Technical University.  4. The Directorate of RE, MoST  5. Al Zawra State Company, Ministry of Industry and Minerals.    The outcome of the discussions emphasized the need to develop the current capacity through technical assistance from UNDP and based on regional best practices. In the draft agreement the College of Engineering, Baghdad University will be the focal point with UNDP and the institutes will have access to the installations and factories in MoST and Al Mansour for training purpose of their student, however this will be within the capacity of Al Mansour and MoST. The mapping of the RE academic sector serves as baseline for the 2nd agreement with RCREE.    During the reporting period, the solar market study was updated with new findings, newly established entities and solar PV installations including Baghdad Renewable Energy and Sustainability Center (BRESC). The study included assessment of the market demand of solar power, industry response strategy, and domestic market analysis. Based on the key findings of the study, the project has finalized a draft of a second agreement with RCREEE which has been approved by the senior management and to be signed with RCREEE during the third quarter of 2019.    The second agreement will cover cooperation in some of the activities in outcome 3 “facilitation of private sector capacity for technology development, innovation and servicing in the solar power” including vocational and academic training support, among other entities collaboration in the preparation of a draft RE programme will be done in consultation with MoE and other official authorities. Representatives of small and local IPPs have been consulted to identify the current barriers and possible actions in order to remove the obstacles. Lessons learned from the region including Morocco, Egypt and Jordon, are being leveraged in the process.    The project has mobilized actions to assess and identify national and regional partners in the field of academic and vocational training in Solar PV. A plan has been finalized and actions underway to perform the following activities in partnership with the RCREEE:  I. Organization of a knowledge exchange mission with the selected regional institution  II. Proposal of PV training materials covering the full life-cycle of solar investment (site and equipment selection, financing, generation and inter-connection, operations and maintenance, etc.)  III. Design a qualified training and certification process for PV    Preparations have been made to organize a high level regional workshop that will invite selected IPPs which have implemented RE projects in the region and their counterpart officials in respective country. The aim of the workshop is to sensitize the Iraqi decision makers on the success stories in the region which can support catalyzing the use of solar PV energy in Iraq. |
| **The progress of the objective can be described as:** | | **On track** | | | | |

# Implementation Progress



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| --- | --- |
| Cumulative GL delivery against total approved amount (in prodoc): | 88.67% |
| Cumulative GL delivery against expected delivery as of this year: | 88.67% |
| Cumulative disbursement as of 30 June (note: amount to be updated in late August): | 1,974,817 |

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| --- | --- |
| **Key Financing Amounts** | |
| PPG Amount | 80,000 |
| GEF Grant Amount | 2,227,273 |
| Co-financing | 10,225,000 |

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| **Key Project Dates** | |
| PIF Approval Date | Nov 15, 2012 |
| CEO Endorsement Date | Aug 11, 2014 |
| Project Document Signature Date (project start date): | Dec 15, 2014 |
| Date of Inception Workshop | Jan 20, 2015 |
| Expected Date of Mid-term Review | Dec 1, 2017 |
| Actual Date of Mid-term Review | Jun 18, 2018 |
| Expected Date of Terminal Evaluation | May 31, 2019 |
| Original Planned Closing Date | Dec 30, 2018 |
| Revised Planned Closing Date | Dec 31, 2019 |

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| **Dates of Project Steering Committee/Board Meetings during reporting period (30 June 2018 to 1 July 2019)** |
| 2018-11-08 |

# Critical Risk Management

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| --- | --- |
| Current Types of Critical Risks | Critical risk management measures undertaken this reporting period |
| Political | In 2018, Iraq supported by the International community dealt with the needs of reconstruction of the liberated area and to encourage the IDPs for a safe and voluntary return to their homes. The year of 2018 witnessed the election and establishment of a new government for the term of 2018-2022. However, till the reporting time, the new cabinet yet to reach the full size. The differences among various political players create an atmosphere of instability and hinder the implementation of the development plan of the country.    The volatile situation in the Gulf area increases the uncertainty the country and reduces the chance of the GoI plan to attract the foreign investors to the country to engage in various developmental fields including the introduction of the renewable energy to the Iraqi power mix.    Internally, the plan of the current government to re-select staff for high-ranked posts (from the level of Director Generals and higher) by the end of June 2019 created uncertainty within the counterparts.    During the reporting period, the project worked closely with the relevant decision-makers (including the Prime Minister Advisory Commission and the Ministry of Electricity) to support the governmental plan to enhance the utilizing of solar energy for power generation. |
| Security | Iraq observes sustained improvement of the security situation in Iraq during the reporting period. However, the precautionary security measures continued and has not yet relaxed to allow frequent official travel by the International experts outside the Green Zone in Baghdad.    The project managed to overcome this obstacle by employing national staff and consultants who can move in the country relatively freely. For the site visits and meetings held in “unsecure areas” the internationals applied the rules and regulations in such circumstances included the transportation within protected convoys. |

# Adjustments

**Comments on delays in key project milestones**

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

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

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

# Ratings and Overall Assessments

|  |  |  |
| --- | --- | --- |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **Project Manager/Coordinator** | Satisfactory | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | During the reporting, the focus of the project has remained on supporting and effective implementation of the recommendations of the independent mid-term review in conjunction with the remaining tasks toward successful completion of the project during the final year in 2019. To this end, the project board has reviewed and endorsed the recommendations from the independent mid-term review and the partners have been engaged in the implementation of the recommendations.  The progress on multiple lines of efforts is underway during the reporting period including continued advocacy of solar energy in Iraq, both at the federal and local level. The project continued to coordinate closely with the High Committee for Renewable Energy for adoption and effective implementation of the policy recommendations made by the project to address the legal, regulatory and technical fronts. The purpose was to seize the momentum and leverage the ongoing lessons and achievements by the project to support the implementation of the Government’s plan of 2000 MW of solar PV installations by 2020.  Most of the planned activities of the project have been successfully implemented, remaining limited activities are planned to be implemented in cooperation with RCREEE during the second half of 2019.  The project supported the GoI in identifying challenges and barriers in the utility-scale related to the contractual process especially PPA agreements. On distributed level, schemes for attracting small and medium enterprises were developed in terms of net metering and feed-in-tariff. The pilot installations provided by the project identified technical barriers in the grid mainly from voltage fluctuations and grid instability. The tax exemption on renewable energy equipment is still effective in the 2019 national budget. A draft law was developed previously by the project which has been under review now by the high-legislation council “Shoura Council” of Iraq.  A new partnership agreement with the RCREEE is being finalized which would allow the project to support the GOI for strengthening private sector partnership for renewable energy development as well as to institute and conduct certified RE training in Iraq.    The project continued to support the gender platform “Women for Green and Safe Iraq” in meeting and events to high gender consideration in the climate change process including Women’s Day event on the 7th of May where a technical presentation on climate finance highlighted the criteria of gender consideration from global funding sources such as GEF and GCF. The presentation also highlighted women engagement in GEF/GCF projects with lessons learnt from other countries including Morocco and Egypt. Gender equity equality was aimed to be achieved and represented in all events, meeting and in the project steering committee.  Preparations have been finalized during the reporting period for a second agreement with RCREEE to develop a private sector programme in addition to academic and vocational certified training. Certified solar PV installation capacity will create a national supply to cover the demand that will arise from the governmental plan for 2000 MW solar up to 2022. | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **UNDP Country Office Programme Officer** | Satisfactory | Satisfactory |
| Overall Assessment | The project focus during the reporting period has been on disseminating the project findings through the established nationwide network of related stakeholder including the private sector, academia, NGOs and local departments in the Iraqi governorates. During 2019, consultation meetings where held with related stakeholders especially MoE and MoHEn to determine the implementation of the drafted legislations, policies and technical codes.  The national capacity in the universities and institutions were assessed to prepare a baseline for an agreement with RCREEE that will develop the syllabus of the RE specializations and establish academic and institutional certified training.  The Programme Unit (PU) continued to work together with the project team to ensure effective oversight and participated in the consultation meetings to support tracking of progress against key milestones and in accordance with the approved work plan. The PU also followed up with project partners on the implementation of project activities and the work plan for the remaining 6 moths.  Weekly field visits to the solar PV installations ensured ongoing operation and prevented security risks. The field visits also supported capacity building for local authorities, universities, NGOs and private sector companies interested in the solar energy market.  Recommendations from the MTR was endorsed by the project steering committee including a second agreement with RCREEE for private and academic sector engagement.  In the background of the security situation in Iraq, movement of international personnel was limited. However the project managed to organize meetings and events the Green Zone or in Erbil/Amman to support project implementation and follow up. | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **GEF Operational Focal point** | *(not set or not applicable)* | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | *(not set or not applicable)* | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **Project Implementing Partner** | *(not set or not applicable)* | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | *(not set or not applicable)* | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **Other Partners** | *(not set or not applicable)* | *- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -* |
| Overall Assessment | *(not set or not applicable)* | |
| **Role** | **2019 Development Objective Progress Rating** | **2019 Implementation Progress Rating** |
| **UNDP-GEF Technical Adviser** | Satisfactory | Satisfactory |
| Overall Assessment | The “Catalyzing the Use of Solar Photovoltaic Energy in Iraq” project is an important initiative in the country where fossil fuel is still dominant. The project is evolving in a very difficult environment, where security risks are high. The project aims to reduce Iraq's dependence on fossil by catalyzing the development of both on and off-grid solar systems in Iraq. The target is to facilitate the installation of 5 MW in aggregate of residential-scale PV generation capacity through the Bytti residential development in Najaf, and the operationalization of 16 utility-scale PV plants resulting in direct GHG reduction benefits of approximately 741,622 tonnes of CO2eq. Let’s see how the project has progressed so far compare to End of project (EoP) targets.    The project is in its 5th and final year of implementation, after a one-year no-cost extension was granted last year.    In term of achievement, compared to the Project Document (ProDoc) log frame, the project has made some advancement, but far to reach its EoP targets. The project conducted a Mid-Term Review (MTR) in early 2018, and the main findings of the MTR is that the second objective of the project, e.g. the operationalization of 16 utility-scale PV plants is no longer possible. Recommendations have been made to focus the project on the off-grid solar PV systems where some progress has been made. The MTR pointed out that the level of ambition regarding the number of utility scale solar PV plants is over ambitious when the project was designed. Given the current context of the country, where the utility system and on grid power generation are very dysfunctional, it is normal that the project did not succeed to operationalize any of the 16-targeted utility scale. The MTR recommended to re-align the EoP by removing the 16 utility scale installations and by then, reduce the EoP target from 741,622 to 160,000. These recommendations were later approved by the Management.    In term of delivery, the cumulative delivery against total approved amount moved from 7% (83% (USD 1,867,718) in 2018 to 88% (USD 1,974,817) in 2019. This is quite significative as the project is on track to disburse its entire budget by end of 2019.    The project has some significant risks, including Political and Security. Among the political and security threats are: the political turmoil in the country, the ISIL invasion from 2014 to 2017, the regular changes in the institutional structures, the high turnover of national counterparts, and the very weak situation of the private sector in Iraq. This have badly impacted the project. As a mitigation measure, the project focused and continues to focus on decentralized off-grid systems where there is less political tension. The on-grid part of the project at national level could not be properly conducted.    In term of partnership, the project is collaborating with the regional body RCREEE, and with local civil society/NGOs such as the Observer Human Rights Center among others. The project has successfully partnered with private sector.    The project also has a very positive gender aspect. The gender focal points of Iraqi ministries and departments have been trained to better understand the nexus and the entry points for gender-responsive actions in the areas of environment, disaster and climate risks management. As an outcome of this initiative, the gender focal points have created a national platform ‘Women for Safe and Green Iraq (WfSGI), under the auspice of the Ministry of Health and Environment (MoHEn), with an overall objective to undertake sustained advocacy and coordinated actions to contribute towards promoting a future that is safe from disasters and environmentally sound while responsive to the equal needs and roles of men and women in Iraqi society.    The project closure is officially on December 2019 and the Terminal Evaluation process has started. The TORs for recruiting the independent evaluators are advertised.    Given the progress made to date by the project in a very difficult environment, a Satisfactory development objective progress rating is warranted to the project. Also, due to the high delivery rate (more than 80%), Satisfactory rating has been granted for implementation progress. | |

# Gender

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

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

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

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

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| **Atlas Gender Marker Rating** |
| **GEN1:** some contribution to gender equality |

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| **Please describe any experiences or linkages (direct or indirect) between project activities and gender-based violence (GBV). This information is for UNDP use only and will not be shared with GEF Secretariat.** |
| *(not set or not applicable)* |

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| --- |
| **Please specify results achieved this reporting period that focus on increasing gender equality and the empowerment of women.**    **Please explain how the results reported addressed the different needs of men or women, changed norms, values, and power structures, and/or contributed to transforming or challenging gender inequalities and discrimination.** |
| The project continued to support the gender platform “Women for Green and Safe Iraq” through identifying barriers and possibilities for women in the renewable energy sector. On Women’s Day, a presentation on gender consideration in climate finance. The presentation also highlighted women engagement in GEF/GCF projects with lessons learnt from other countries including Morocco and Egypt. Successful livelihood stories with women entrepreneurs were presented including Solar Sisters as well as possible solar energy technologies which can be used by women in rural areas. |

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| **Please describe how work to advance gender equality and women's empowerment enhanced the project's environmental and/or resilience outcomes.** |
| The project has been engaged with gender groups including Women for Green and Safe Iraq” and local NGOs focusing on women in Najaf to emphasize the role of gender in tackling climate change and preventing unequal opportunities for women in project related to climate finance. It is a criteria to consider gender from global funding sources such as GEF and GCF, however the national climate finance sector needs to develop gender policies and strategies to include women in the planning, design and implantation phases. |

# Social and Environmental Standards

**Social and Environmental Standards (Safeguards)**

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

|  |
| --- |
| **1) Have any new social and/or environmental risks been identified during project implementation?** |
| No |

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| **If any new social and/or environmental risks have been identified during project implementation please describe the new risk(s) and the response to it.** |
| *(not set or not applicable)* |

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

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| **If any existing social and/or environmental risks have been escalated during implementation please describe the change(s) and the response to it.** |
| *(not set or not applicable)* |

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| **SESP:** [PIMS 5137 - Iraq - ESSP Screening\_PM-signed.pdf](https://undpgefpims.org/attachments/5137/213836/1681501/1681782/PIMS%205137%20-%20Iraq%20-%20ESSP%20Screening_PM-signed.pdf)  **Environmental and Social Management Plan/Framework:** *not available* |
| **For reference, please find below the project's safeguards screening (Social and Environmental Screening Procedure (SESP) or the old ESSP tool); management plans (if any); and its SESP categorization above. Please note that the SESP categorization might have been corrected during a centralized review.** |
| *(not set or not applicable)* |

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

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

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

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

# Communicating Impact

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| **Tell us the story of the project focusing on how the project has helped to improve people’s lives.**  **(This text will be used for UNDP corporate communications, the UNDP-GEF website, and/or other internal and external knowledge and learning efforts.)** |
| Sensitizing and raising awareness on renewable energy as the key vehicle to promote low emission climate resilient development has gained popular momentum as the country started stepping away from the curse of the ISIL era. An increasing number of events, workshops, seminars on the importance of renewable and solar are progressively being held in the country which is being organized by the Iraqi Universities, NGOs and local authorities. The experience of the pilot installation by the GEF UNDP project is being showcased in most of these events to understand and appreciate the promising prospect of solar PV energy as a sustainable and reliable energy source to meet the growing energy demand in Iraq.    The above efforts have resulted in a number of in-country initiatives that aim to create impact to popularize renewable energy and add value to overcome the potential social and economic barriers facing RE in an oil-rich country like Iraq.    One of the brightest examples to mention here is a new establishment of the Baghdad Renewable Energy and Sustainability Center (BRESC) by the private sector entity within the premise of the Baghdad International Exhibition, located centrally at the heart of Baghdad city. BRESC use recycled materials, grew hydroponic gardening, installed roof-top solar PV installations and has a recycling station for waste. This center has started to expose the visitors to the practical use of renewable and innovative clean technologies that have the potential to Iraq on the path of environment-friendly and climate resilient recovery and development. and the experience of being environment-friendly technologies. BRESC attracted high-level decision-makers including the potentials ministers and the prime minister.    UNDP-GEF project encouraged this initiative and engage BRESC in the advocacy efforts for catalyzing the use of solar energy in Iraq. UNDP’s collaboration with the BRESC will be strengthened further in the coming months and years for targeted advocacy and training for clean energy solutions in Iraq.    UNDP was invited to join the High Energy Committee headed by the Energy Deputy Prime minister and accordingly seize the opportunity to present solar energy as a potential means to avoid summer-time peak energy demand in Iraq and expressed its readiness to provide technical support to the Government of Iraq so as to avoid any risks of violence and political instability as was experienced in 2018.    The project identified that a Power Purchase Agreements (PPA) was a main barrier in previous efforts from MoE to attract private sector investment in solar PV energy. A PPA template was developed based on the best regional practices and tailored to the Iraqi context. Ministry of Electricity announced a new tendering proposal for 450 MW of solar PV energy and it is expected that many of the previous barriers have been lifted.    MoHEN has made significant progress to develop and prioritize pipeline projects for Mitigation which will be part of the country programme document for accessing to GCF and other climate financing. A large part of these projects are renewable energy development to meet the growing energy demand mostly in the poverty-stricken region in the south having very limited access to energy.    The most significant change during the reporting period is the draft renewable energy law that was prepared by the project and sent to Ministry of Electricity. The draft law was reviewed by Ministry of Electricity and sent to the legislation council “Shoura Council” and is expected to be sent to the energy committee in the parliament. The renewable energy law was a main barrier for many foreign investors and will lay a foundation for a renewable energy market in Iraq based on demand and fiscal schemes supported by legislation. |

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

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| --- |
| **Please describe knowledge activities / products as outlined in knowledge management approved at CEO Endorsement /Approval.**    **Please also include: project's website, project page on the UNDP website, blogs, photos stories (e.g. Exposure), Facebook, Twitter, Flickr, YouTube, as well as hyperlinks to any media coverage of the project, for example, stories written by an outside source. Please upload any supporting files, including photos, videos, stories, and other documents using the 'file lirbary' button in the top right of the PIR.** |
| Project description on the UNDP homepage:  http://www.iq.undp.org/content/iraq/en/home/operations/projects/environment\_and\_energy/SolarEnergy.html    Iraq´s nationally Appropriate Mitigation Action event:  http://www.iq.undp.org/content/iraq/en/home/presscenter/pressreleases/2017/02/11/iraq-prepares-to-curb-greenhouse-gas-emissions-through-development-of-a-roadmap-for-mitigation-action/    UNDP facilitates Iraq’s national preparations to COP22:  http://www.iq.undp.org/content/iraq/en/home/presscenter/pressreleases/2016/10/25/undp-facilitates-iraq-s-national-preparations-to-cop22-.html    Taqaway – Iraq database for solar energy  http://taqaway.net/network/mod/book/iraq\_network.php    2018, BBC report on solar energy in Iraq was done by the support of the project, meetings was organized with MoE, MoST, MoE, visits to a planned solar PV site in Najaf, visit to a heavy oil plant in Najaf and to private sector companies.  http://www.bbc.com/arabic/resources/idt-sh/solar\_energy\_iraq\_arabic    2017/02/11 Report on workshop for NAMA roadmap http://www.iq.undp.org/content/iraq/en/home/presscenter/pressreleases/2017/02/11/iraq-prepares-to-curb-greenhouse-gas-emissions-through-development-of-a-roadmap-for-mitigation-action.html    2017/02/10 Report on Bayti installations http://www.iq.undp.org/content/iraq/ar/home/presscenter/pressreleases/2017/10/02/undp-support-for-renewable-energy-in-iraq.html    2016/10/02, Middle East online, report on the installations in Bayti installations provided by the project. https://www.middle-east-online.com/%D8%A7%D9%84%D8%B9%D8%B1%D8%A7%D9%82-%D9%8A%D9%84%D8%AC%D8%A3-%D9%84%D9%84%D8%B7%D8%A7%D9%82%D8%A9-%D8%A7%D9%84%D8%B4%D9%85%D8%B3%D9%8A%D8%A9-%D9%84%D8%AD%D9%84-%D9%85%D8%B9%D8%B6%D9%84%D8%A9-%D8%A7%D9%86%D9%82%D8%B7%D8%A7%D8%B9-%D8%A7%D9%84%D9%83%D9%87%D8%B1%D8%A8%D8%A7%D8%A1    2016/05/28, Noun News Agency, Report on Bayti, http://non14.net/72222/    The project succeeded in bringing together several private sectors companies, and over two dozen NGOs at one single event. Forty participants representing the government, private sector, academic institutions and NGOs attended the event. The project is being contacted on a weekly basis from diverse government officials, private sector entrepreneurs, communities, holy shrines, agriculturalists and others who would like to know more about solar energy and how they can apply it for their energy needs.  News on the workshops:  http://www.rcreee.org/content/rcreee-support-sustainable-development-photovoltaic-energy-iraq    The project was invited to join workshops held in Baghdad Provincial Council and Najaf Governorate and Najaf Provincial council to present the findings of the project and give technical support.  The project participated in the 2nd annual environmental conference in Karbala:  https://im.imamhussain.org/arabic/arabicnews/6502    Baghdad Renewable Energy and Sustainability Center:  https://www.facebook.com/permalink.php?story\_fbid=646870672408669&id=573775126384891&\_\_tn\_\_=-R |

# Partnerships

**Partnerships & Stakeholder Engagment**

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

|  |
| --- |
| **Does the project work with any Civil Society Organisations and/or NGOs?** |
| Yes |

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| **Does the project work with any Indigenous Peoples?** |
| No |

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

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| **Does the project work with the GEF Small Grants Programme?** |
| No |

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

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

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| **CEO Endorsement Request:** [PIMS 5137 - CEO ER - Iraq - Catalysing the Use of Solar Photovoltaic Energy - 22 July 2014.docx](https://undpgefpims.org/attachments/5137/213836/1681511/1681792/PIMS%205137%20-%20CEO%20ER%20-%20Iraq%20-%20Catalysing%20the%20Use%20of%20Solar%20Photovoltaic%20Energy%20-%2022%20July%202014.docx) |
| **Provide an update on progress, challenges and outcomes related to stakeholder engagement based on the description of the Stakeholder Engagement Plan as documented at CEO endorsement/approval (see document below). If any surveys have been conducted please upload all survey documents to the PIR file library.** |
| Bringing four ministries to a common platform has been a challenge. However, UNDP, under Direct Implementation Modality (DIM) has managed successfully managed the trade-offs and harnessed the collaborative opportunities and synergy throughout the implementation period. Given the high-level policy engagement, the project has been able to anchor at the apex level in the Government where the Energy Advisor of the Prime Minister is engaged to coordinate the implementation of the policy recommendations.    The project implementation has been benefited through establishing UNDP’s partnership with a regional center of excellence ‘Regional Centre for Renewable Energy and Energy Efficiency’ which has contributed significantly to producing high-quality deliverables.    At the local level, the project has gained a very positive experience through the engagement of a range of stakeholders, NGOs, Academics. In conclusion, the stakeholders’ participation in the project has been very broad and the collective experience till the last year is very rich and encouraging. The project was praised by the GoI for successfully working together with four ministries and a private sector company for more than 4 years as direct partners with clear roles, responsibilities and engagement in the project implementation.    The Ministry of Environment was merged with the Ministry of Health and is now the Ministry of Health and Environment (MoHEn). The MoHEn has been the main partner of the project and the focal point for UNFCCC and GEF Operational Focal point under the lead of Dr. Jasim Al Falahy. MoHEn has fulfilled its role in the public awareness campaigns and other events in addition to contributing to the discussions and coordination for required regulatory and policy reforms to expand the soar power industry in Iraq.    The Ministry of Electricity (MoE) changed their representative in the 3rd year of the project and have been active in the project through technical discussions on the improvement of the grid to better utilize RE and attract private sector investment. Due to the armed conflicts in Iraq from 2014 to 2017 in addition to the drop in oil prices, which covers more than 90 % of Iraq’s budget, the MoE and other ministries could not implement their development plans. However, the MoE is aiming towards implementing solar PV projects through private sector investment, currently 450 MW is available for tendering which far exceeds the originally planned 36.5 MW.    The Ministry of Science and Technology was merged with Ministry of High Education and is now Ministry of Higher Education an Scientific Research (MoHESR). MoHESR was provided with solar PV lab station to evaluate different solar PV technologies in the Iraqi context including high temperatures and dust storms. They have provided annual reports on the solar PV installation in Al Mansour.    Anbar University Renewable Energy Research Centre was not reachable and they could not attend the steering committee meeting due to the armed conflicts between 2014 – 2017. College of engineering under Baghdad University joined the project steering committee as observer from 2018 and took over the role as the academic sector stakeholder.    Al Shafei Group, developer of the Bytti project and the private sector as a whole was highly affected by the economy crisis until 2017. In 2018 Bytti continued with the development of the infrastructure and the project has been supporting Byttii and the local authorities in Najaf to implement the 5 MW solar PV plan.    Ministry of Industry and Minerals is fulfilling its role through Al Mansour Factory which is now under the umbrella of Al Zawraa State Company and is producing PV equipment and implementing solar PV installations. |

# Annex - Ratings Definitions

**Development Objective Progress Ratings Definitions**

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

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

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

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

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

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

**Implementation Progress Ratings Definitions**

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

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

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

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

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

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