



2020
Project Implementation Review (PIR)



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Jamaica Renewable Energy

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A. Basic Data

Project Information	
UNDP PIMS ID	4900
GEF ID	5843
Title	Deployment of Renewable Energy and Improvement of Energy Efficiency in the Public Sector
Country(ies)	Jamaica, Jamaica
UNDP-GEF Technical Team	Energy, Infrastructure, Transport and Technology
Project Implementing Partner	JAM10 (Jamaica)
Joint Agencies	<i>(not set or not applicable)</i>
Project Type	Medium Size - 2 steps

Project Description
<p>This project seeks to advance a low carbon development path and reduce Jamaica's public sector energy bill through the introduction of renewable energy (RE) and improvement in energy efficiency (EE) in the health sector. The project will build relevant capacity in the public sector by increasing the knowledge base of its operatives on matters pertinent to RE and EE as well as developing the appropriate technical skills necessary to support investments in the sector. It will strengthen the regulatory framework that governs the development and deployment of RE and EE technologies. The project will support an investigate a potential mechanism involving public private partnership (PPP) that will engender a greater uptake of RE and EE. The hospital sector has a high-energy demand and high operational costs and would benefit significantly for RE and EE applications.</p>

Project Contacts	
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Project Implementing Partner	Mr. Robert Clarke (robert.clarke@pcj.com) Mr. Brian Richardson (brian.richardson@pcj.com)
Other Partners	Mr. Edison Galbraith (egalbraith@dbankjm.com)

B. Overall Ratings

Overall DO Rating	Moderately Satisfactory
Overall IP Rating	Moderately Satisfactory
Overall Risk Rating	low

C. Development Progress

Description					
Objective					
To advance a low carbon development path and reduce Jamaica's public sector energy bill through the introduction of renewable energy (RE) and improvement in energy efficiency (EE) in the health sector.					
Description of Indicator	Baseline Level	Midterm target level	End of project target level	Level at 30 June 2019	Cumulative progress since project start
A. Total direct GHG emission reductions (ton CO ₂ eq);	A. No reductions (0 ton CO ₂ eq);	<i>(not set or not applicable)</i>	A. 16,919 ton CO ₂ eq (over lifetime);	92.39 ton CO ₂ to be reduced annually through a PV system installed at one facility. Procurement of RE and EE equipment for three (3) facilities in progress that will result in reduce CO ₂ emissions.	<i>(not set or not applicable)</i>
B. Volume of investment in RE and EE technologies mobilized (US\$/yr);	B. No investment mobilized (US\$ 0/y)	<i>(not set or not applicable)</i>	B. US\$ 6 mln per year (from DBJ);	Procurement of RE and EE equipment in progress.	Investments of US\$2.3 Million Dollars per year mobilized from the DBJ
C. Extent to which EE policies and regulations are adopted and enforced (aligned with GEF CC tracking Tool).	C. "1" (no regulation)	<i>(not set or not applicable)</i>	C."3" (regulation proposed but not adopted)	ESCO Consultant engaged to support plans and strategies to develop ESCO industry. Support being given to the Bureau of Standards Jamaica in revising and updating building codes aligned to the national context and support advancement of RE and EE	Energy Efficiency and Conservation Standards Manual proposed and adopted. National Guidelines for Solar PV Operations and Maintenance developed and awaiting adoption. Recommendations for improved Sustainable Energy Education proposed but not yet adopted. Recommendations for a sustainable local ESCO Industry including a Roadmap has been formulated but not yet adopted by Government.

D. Annual electricity production (RE) and savings (EE) of installed demonstration pilots (MWh/yr);	D. No energy produced or saved (0 MWh/yr);	<i>(not set or not applicable)</i>	D. 3.583 MWh/yr:	Installation of a 76kWh Grid-Tied PV System in progress at May Pen Hospital in 2019. An estimated 116kWh/yr to be produced annually.	One 75kW Solar PV system has been installed and pending commissioning. Two other PV system (75kW and 15kW) is pending the arrival of materials to commence installation. Project energy production is 250 MWh/yr.
E. Number of beneficiaries with access to improved energy services in Jamaica's health sector (m/f).	E. No beneficiaries reached (0m; 0f).	<i>(not set or not applicable)</i>	E. 50 hospital clients per day (25m/25f).	120 persons have benefitted from capacity building initiatives on Energy Management and Renewable Energy. However no beneficiaries have been reached yet through RE and EE Interventions. This should be achieved in the next PIR cycle.	<i>(not set or not applicable)</i>

The progress of the objective can be described as: Progress not set

Outcome 1
Increased knowledge in RE and EE for individuals in the public sector and strong institutional capacity to support RE and EE development in Jamaica's public sector.

Description of Indicator	Baseline Level	Midterm target level	End of project target level	Level at 30 June 2019	Cumulative progress since project start
1a) Quality standards for RE and EE tertiary education formalized (y/n);	1a) No quality standards;	<i>(not set or not applicable)</i>	1a) Quality standards adopted by tertiary education sector and formalized by Government	Recommendations for an improved RE and EE Education shared with the Jamaica Tertiary Education Commission (JTEC). JTEC is the local organization mandated by the Ministry of Education to formalized quality standards where Education	Recommendations for quality standards for RE and EE post-secondary education developed. Jamaica Tertiary Education Commission (JTEC) committed to advancing recommendations.

				is concern.	
1b) Number of building managers and O&M staff certified (m/f);	1b) No people trained and certified (0);	<i>(not set or not applicable)</i>	1b) 20 people certified (26m/14f);	Thirty (30) technicians trained in energy management and solar PV operations and maintenance.	32 Maintenance Persons were trained and certified over 4-days in Energy Management and Solar PV Operations and Maintenance. (32 m/0f). 80 Health Sector Operatives (52m/18f) including CEOs, Administrators, O&M Officers were sensitized on the importance of Energy Management and Renewable Energy Technologies.
1c) Number of BSJ staff certified to perform RE/EE compliance tests (m/f)	1c) No BSJ staff trained and certified (0).	<i>(not set or not applicable)</i>	(1c) 6 BSJ staff certified (3m/3f)	Three (3) BSJ Staff were certified through the R3E Project. GEF5 Project strengthened the insitutional capacity of the BSJ to undertake enegy efficiency testing through the purchase of a generator.	Three (BSJ) Staff certified

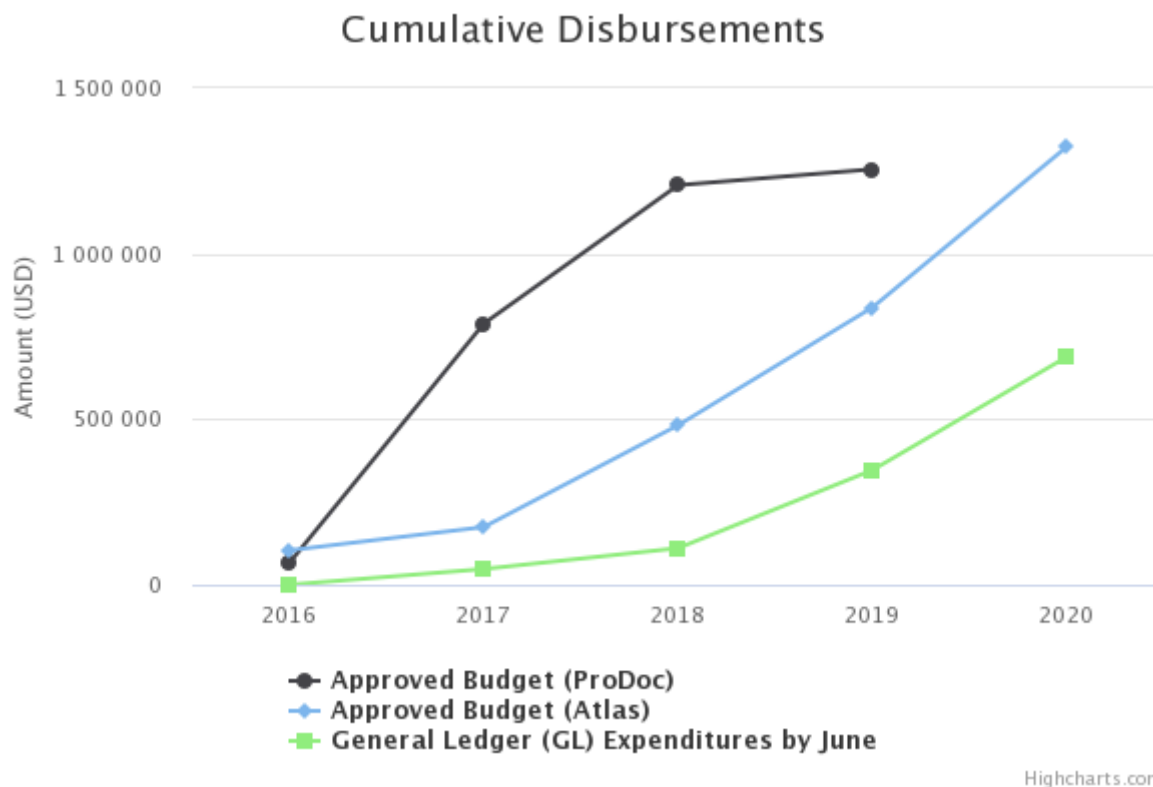
The progress of the objective can be described as: **Progress not set**

Outcome 2
A supportive legal and regulatory framework to facilitate the deployment of small decentralised RE power generation (notably solar PV) and EE programmes in Jamaica's public sector.

Description of Indicator	Baseline Level	Midterm target level	End of project target level	Level at 30 June 2019	Cumulative progress since project start
2a) Implementation level of RR/EE regulation under national legislation including Electricity and Building Act;	2a) Legislation submitted for approval but no specific RE/EE regulation drafted	<i>(not set or not applicable)</i>	RE/EE regulation drafted and proposed for approval;	Updating of the National Building Codes will be completed within the next PIR Period.	Regulations with respect to Building Code, Mechanical Code and Energy Conservation Code are currently being revised through the Bureau of Standards Jamaica.
2b) Implementation status of green procurement in Jamaica's public	2b) No guidelines for	<i>(not set or not applicable)</i>	2b) Guidelines for green procurement	National guidelines for solar PV operations and maintenance drafted	Project supported the development and review of the National Energy

sector.	green procurement.	<i>applicable</i>)	proposed and accepted.	and shared with Bureau of Standards Jamaica.	Efficiency and Conservation standards Manual for which green procurement is a subset.
The progress of the objective can be described as:		Progress not set			
Outcome 3					
An operational Energy Performance Contracting mechanism to facilitate the development of ESCOs and their viability to support RE and EE scale-up in the public sector of Jamaica.					
Description of Indicator	Baseline Level	Midterm target level	End of project target level	Level at 30 June 2019	Cumulative progress since project start
3a) EPC business model for RE/EE installation and operation designed and implemented (y/n);	3a) No EPC models for RE/EE in place in Jamaica;	<i>(not set or not applicable)</i>	3a) EPC business models and contracts for RE/EE implemented (tentatively: 5 contracts);	Draft ESCO Business Model developed. Model procurement documents being drafted.	No EPC models have been implemented however a roadmap for a sustainable ESCO Industry Locally was developed.
3b) Number of hospitals retrofitted with RE and EE Technologies	3b) No hospital retrofitted with RE and EE technologies	<i>(not set or not applicable)</i>	3b) Four hospitals retrofitted with RE and EE Technologies)	One hospital being retrofitted with Solar PV. Contract signature anticipated for late 4th quarter 2019 for lighting retrofits in 3 facilities. Contract signature anticipated late 4th quarter 2019 for solar pv intervention at another two hospitals.	Three health facilities have been retrofitted with LED Lighting Solutions. The remaining (3) facilities are expected to be retrofitted with LED Lighting solutions by December 2020. One health facility has received a 76kW PV System. Two other health facilities are expected to receive a 75kW and a 15kW System by December 2020.
The progress of the objective can be described as:		Progress not set			

D. Implementation Progress



Cumulative GL delivery against total approved amount (in prodoc):	54.84%
Cumulative GL delivery against expected delivery as of this year:	54.84%
Cumulative disbursement as of 30 June (note: amount to be updated in late August):	688,184

Key Financing Amounts	
PPG Amount	100,000
GEF Grant Amount	1,254,987
Co-financing	10,748,754

Key Project Dates	
PIF Approval Date	Jun 10, 2014
CEO Endorsement Date	Mar 23, 2016
Project Document Signature Date (project start date):	Jul 28, 2016
Date of Inception Workshop	Mar 24, 2017
Expected Date of Mid-term Review	<i>(not set or not applicable)</i>

Actual Date of Mid-term Review	<i>(not set or not applicable)</i>
Expected Date of Terminal Evaluation	Jan 20, 2021
Original Planned Closing Date	Jul 28, 2020
Revised Planned Closing Date	Mar 26, 2021

Dates of Project Steering Committee/Board Meetings during reporting period (30 June 2019 to 1 July 2020)
2019-10-16

E. Critical Risk Management

Current Types of Critical Risks	Critical risk management measures undertaken this reporting period
Political	<p>The frequent change of Group Managing Directors and interim Managers at the PCJ resulted in changes in perspective, vision and priorities for PCJ. This in turn contributed to the delays experienced in key project deliverables such as the final energy audit reports.</p> <p>Similarly, certain Project indicators and results of the Project related to guidelines and established procedures were heavily dependent on approval from varying entities such as the Ministry of Finance. Regrettably, while there was buy-in at the beginning of the project, multiple policy changes and priorities resulted in previously agreed commitments to be rescinded</p> <p>The project has had to maintain close communication with partners via email/teleconference/letters to expedite activities and resolve pending issues such as their poor performance as Responsible Party for Outcome 3.</p>
Operational	<p>One of the key outputs for the project is the establishment of an ESCO. This operational model however is novel to Jamaica and the Caribbean. The ESCO model profited however, envisaged the GoJ through the Ministry of Finance, approve the reinvestment of the value of the energy savings realized through the operations of an ESCO, into a sustainable financing vehicle that would fund similar projects in other hospitals or public sector buildings.</p> <p>At the project development phase, PCJ committed to be a responsible party and donor to the project, given their strategic focus to become a super ESCO. As, the super ESCO, PCJ's vision was to manage, implement and monitor the Energy Performance Contracts issued under the Programme. However, the Ministry of Finance and Planning (MOFP) was not amenable to that mechanism through the PCJ.</p> <p>The project has had to maintain close communication with partners via email/teleconference/letters to expedite activities and resolve pending issues. The project had subsequently proposed other alternative mechanisms at their request, however, to date we are awaiting feedback on our proposals.</p>
Operational	<p>Procurement and Installation delays due to COVID-19 Pandemic</p> <p>The arrival of the COVID-19 Pandemic in March 2020 severely impacted the project implementation and timelines. Procurement notices for energy efficient lighting retrofits were cancelled given the health risk posed to team members who would have been required to conduct site visits at various these health facilities during peak of the virus. Additionally, as a mitigation measure to reduce the spread of the virus, the government issued stay-in-place orders which restricted movement of persons with Jamaica. Hence the project team including consultants and contractors were unable to conduct activities such as verification exercises, technical assessments and installations of RE and EE interventions. Shipment of equipment and materials to Jamaica were also impacted. This</p>

	<p>event delayed the project by four (4) months.</p> <p>As a mitigating measure, the project has been in dialogue with the management of the Hospitals regarding timeline to resume installation work or to conduct relevant site visits. In light of this risk, the Project will also be seeking an extension to have the critical installations, capacity building and project closure activities completed .</p>
Operational	<p>The project has been operating without a Project Officer since March 2019. Being at this critical stage the workload has significantly increased leading to challenges in the PMU effectively managing and monitoring project activities. The PCJ had committed to providing an officer to support in this regard, however this was not materialized. In addition to that, the project no longer has the technical support of the PCJ as their functions have been transferred to the Ministry of Energy.</p> <p>As a mitigating measure, the project has been in dialogue with the Local Technical Advisor who has been contracted since February 2018 to revise the deliverables in light of the technical gap arising from the absence of PCJ as a partner going forward. The project is also in the process of recruitment a UNV intern to support the administrative aspect.</p>

F. Adjustments

Risk Management

The Country Office is responsible for completing the Risk Management section of the PIR in consultation with the RTA. Before updating the PIR, the Country Office must update project-level risks in the Atlas Risk Register line with UNDP's enterprise risk management policy and have a detailed discussion with the RTA on risk management. Next, the Country Office must select below the 'high' risks identified in the Atlas Risk Register as well as any other 'substantial' risks from the Atlas Risk Register identified by the RTA as needing to be addressed in the PIR. Moderate and Low risks do not need to be entered in the PIR Risk Management section. After selecting the risk, a text field will appear where the Country Office should describe the risk and explain actions undertaken this reporting period to address the risk selected.

Select the risk(s) from the options that match the 'high' risks in the project's UNDP Risk Register as well as any 'significant' risks from the register, as agreed with the RTA. Please describe the risk identified and explain the management approach agreed between the RTA and Country Office on managing/mitigating the risk.
Political
Operational
Operational
Operational

Comments on delays in key project milestones

Project Manager: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.
The project experienced delays due to COVID19 pandemic in advancing activities including the terminal evaluation. As a result, the project requested and was granted an extension of 8 months to be able to timely complete the remaining activities in light of the challenges and setbacks caused by the pandemic.
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.
N/A
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.
<i>(not set or not applicable)</i>

G. Ratings and Overall Assessments

Role	2020 Development Objective Progress Rating	2020 Implementation Progress Rating
Project Manager/Coordinator	Moderately Satisfactory	- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -
Overall Assessment	<p>a) Full justification for the DO and IP rating based on full and complete progress reported. If the rating provided is not the same as previous years (if relevant), explain what changed and why. If progress is rated in the unsatisfactory range explain why and outline steps that will be taken to get the project back on track. Note that ratings in the unsatisfactory range are welcome when progress warrants an unsatisfactory rating. Do not avoid an unsatisfactory rating; provide a credible and realistic rating;</p> <p>The overall progress of the project over this reporting period has been moderately satisfactory despite the challenges experienced with key stakeholders and the COVID19 pandemic. The 2019 Annual Work Plan was not fully implemented due project staffing limitations, delays in shipment of equipment for solar PV systems and delays in project partners advancing critical steps to expedite project activities.</p> <p>The Project Staff comprises of a Project Manager and a Finance Officer. The attrition rate of project staff at the early stages and mid-point of project execution, and the subsequent re-engagement process, contributed to intermittent delays throughout the project duration. Since its inception, the project changed the Project Manager, Finance Officer and Project Officer. The re-engagement and learning curve process led to further implementation delays. The project has been operating without a Project Officer since March 2019 and a new Finance Officer was engaged in July 2019. The PCJ's commitment to provide an Officer failed to materialize which resulted in increased workload for the PMU for the remainder of the project.</p> <p>Notwithstanding, UNDP has reached an agreement with the contracted Local Technical Advisor to amend the deliverables to include some technical activities that the PCJ would normally undertake. This would ensure that adequate technical support is available to effectively achieve the remaining project results. The Project has also taken steps to engage an Intern to provide much needed administrative support to complete remaining project activities.</p> <p>During this PIR review period, the arrival of the COVID-19 Pandemic in March 2020 severely impacted project implementation and timelines. Procurement notices for energy efficient lighting retrofits were postponed given the health risk posed to the project team including consultants and contractors who would have been required to conduct site visits at various these health facilities during peak of the pandemic. Additionally, as a mitigation measure to reduce the spread of the virus, the Government issued stay-at-home orders which restricted movement of persons within Jamaica. Hence the team was unable to conduct the requisite site visits. This delayed ongoing installations and shipment of equipment by at least three (3) months. The Pilot Projects require various activities to facilitate implementation, including diagnostic studies, field evaluations, compilation of lessons learned, integration in the MRV systems, and proposed actions based on obtained results. For a number of pilot projects the initial stages have been completed but the final implementation and integration of results remains pending. In an effort to effectively complete these activities the project had requested an additional 8-month extension which was granted by GEF.</p> <p>The Petroleum Corporation of Jamaica (PCJ) as the Responsible Party for the</p>	

achievement of Outcome 3, frequently experienced a change of Group Managing Directors and interim Managers that resulted in vicissitudes in perspective, vision and priorities for PCJ. This in turn contributed to the delays finalizing key project deliverables such as the final energy audit report and other procurement documents in relation the ESCO initiative. Similarly, certain Project indicators and results of the Project related to guidelines and established procedures were heavily dependent on approval from varying entities such as the Ministry of Finance. Regrettably, while there was buy-in at the beginning of the project, multiple policy changes and priorities resulted in previously agreed commitments being stalled. One of the key outputs for the project is the establishment of an ESCO. This operational model however is novel to Jamaica and the Caribbean. At the project development phase, PCJ committed to being a responsible party and co-financier to the project, given its strategic focus to become a super ESCO. As, the super ESCO, PCJ's vision was to manage, implement and monitor the Energy Performance Contracts issued under the Programme. However, the Ministry of Finance and Planning (MOFP) was not amenable to that mechanism through the PCJ. The project had subsequently proposed other alternative mechanisms at their request, however, to date we are awaiting feedback on that proposal. The Planning Institute of Jamaica as been also lobbying on behalf of the project to ascertain the MOFP's feedback on the ESCO Proposal.

Despite these dynamic challenges faced by PMU, progress on activities and indicators improved during this reporting period. Achievements to date include:

1. Recommendations for acceptable industry standards in RETs and EE training and education, particularly in the solar PV subsector developed and capacity of selected training institutions within the RE/EE sector enhanced
Gap analysis including detail recommendations for improving sustainable energy education in Jamaica completed. The Jamaica Tertiary Education Commission (JTEC) an agency of the Ministry of Education is committed and has submitted a workplan to advance the recommendations for improving sustainable energy education in Jamaica.
2. Technicians within the public sector trained and certified to acceptable industry standards in renewable energy technology and energy efficiency particularly in the solar photo-voltaic subsector Two (2) Sensitization workshops on the importance of energy management and renewable energy technologies were conducted in February 2019. Of the total of 80 persons in attendance, 25% were male and 75% female Representatives include hospitals, health centres, regional health authorities, academia and NGOs. A 4-day training workshop was also conducted February 18th - 21st 2019 at the Wigton Windfarm Renewable Energy Lab. A total of 32 maintenance personnel from the health sector were trained in Energy management and in Solar PV operation and Maintenance.
3. Relevant institutional capacity within public institutions strengthened to facilitate an increase in the scale-up of RE and EE. The project supported the Bureau of Standards Jamaica (BSJ) in upgrading its Energy Efficiency AC laboratory testing capabilities through the purchase of an auxiliary generator. This has improved their capacity for testing AC units with frequencies of 50Hz and 60Hz. This also will provide an opportunity for greater CARICOM integration as the BSJ is intent on becoming a regional research/testing center.
4. A supportive legal and regulatory framework to facilitate the deployment of small decentralised RE power generation (notably solar PV) and EE programmes in Jamaica's public sector. The project was able to develop draft National Guidelines for solar PV installations, operations and maintenance. This will ensure a high-quality installation covering standards and best practices for the following areas: Components, AC Installation, DC Installation (cable, DC

switches, induction loop, fuses), Lightning Protection, Fire Safety, Rooftop Installation, Safety at work, Commissioning, Operation & Maintenance. The Project also supported the Ministry of Energy in developing a National Energy Efficiency and Conservation Standards Manual.

5. Uptake of renewable energy strengthened with the Energy Performance Contracting pilot programme: Under this Output the Project conducted relevant training in Energy Performance Contracting for forty (40) representing key Government Ministries, Departments and Agencies. This training was a mix of face-to-face and remote sessions which was achieved through collaboration between UNDP, PCJ, ECONOLER and the Clean Energy Solutions Centre (CESC). A Qualitative Market Assessment was conducted which analyzed the main opportunities and challenges of the local ESCO market in Jamaica. The assessment included but was not limited to ESCO concepts, Performance Contracting, shared and guaranteed savings, ESPC Initiatives in the country, Lessons learned, challenges and short to long term recommendations and possible road map. The findings were also presented to key stakeholders and the feedback was incorporated into the final document.

6. Investments in Solar PV, solar water heaters and energy efficiency retrofits in the health sector encouraged- A 75kw Grid-tied Solar PV System has been installed at the May Pen Hospital and awaiting commissioning. Annual system generation and cost savings are projected at 116,000kwh and USD26,000 respectively.

7. A contract was signed in February 2020 for the installation of a combined 90kW grid-tied solar PV system at the National Chest and Sir John Golding Health Facilities. Solar panels and associated materials are expected to arrive in August 2020. Installation timeline is projected at 4-6 months.

8. Three health facilities (Bellevue, National Chest and Sir John Golding) were retrofitted this year with LED Lighting Solutions. This intervention will result in annual energy savings of approximately 200,000kWh and annual cost savings of approximately USD50,000.

9. Procurement of LED Lighting Solutions for the remaining three (3) locations was delayed due the COVID-19 pandemic but was subsequently resumed in June 2020. Contract signing is anticipated in August 2020. This intervention will also result in annual energy savings of approximately 200,000kWh and annual cost savings of approximately USD50,000.

With the granted extension of 8months, the project will also be pursuing the following activities:

1. Completion of capacity building and knowledge transfer activities that will increase public and private investments and participation in the sustainability of the health sector including: Strengthen the communication strategy to raise consumer awareness of the technical, economic, social and environmental benefits of renewable energy and energy efficiency

2. Consolidating the project exit strategy and workshops with public and private entities involved in the implementation of the sustainable local ESCO Industry Roadmap in the long term to ensure the transfer of knowledge, lessons learned and communication of the clear path forward regarding the sustainability of the Project.

3. Improved sustainability of interventions through technical assistance and

	<p>business model innovation.</p> <p>4. Critical support where improvement of energy access in health facilities is concern in light of the COVID-19 pandemic.</p> <p>The PMU is confident that the outstanding activities will be completed, that all the project funds expended, and the project outputs and outcomes will be realized.</p>	
Role	2020 Development Objective Progress Rating	2020 Implementation Progress Rating
UNDP Country Office Programme Officer	Moderately Satisfactory	Moderately Satisfactory
Overall Assessment	<p>Through adaptive measures aggressively implemented during the reporting period, significant progress were made in project implementation. For example, the cumulative delivery up to June 2020 of USD 688,184 is twice what it was in June 2019. This reflects improvement in project expenditure as well as achievement of some important results. The project is registering cumulative expenditure of 54.8% as of June 2020. While the intention was to have a higher delivery rate, some key activities within the project were negatively impacted by the COVID-19 pandemic. COVID-19 resulted in delayed implementation of many of the planned activities. In addition, project implementation was hampered by the transitioning and dissolution of the PCJ, a key responsible party in the project. Hence, the project's achievements should be analysed in the context of these two major issues.</p> <p>With the strong support of the Project Manager, UNDP Team and partners, significant progress were made in Components 1 and 2 of the project. However, implementation of Component 3 which carries majority of the project's budget allocation is significantly delayed. PCJ as responsible party was responsible for the implementation of this Component. Despite the dissolution and management issues with the PCJ, UNDP managed to adjust the workplan to accelerate implementation under Component 3. However, activities were interrupted by COVID-19 due to a raft of containment measures implemented by the Government, including stay-at-home orders, social distancing and curtailment of activities. One major achievement expected under this Component is the establishment of a sustainable finance mechanism associated with the ESCO concept. During the prior reporting period, UNDP faced challenges in the Ministry of Finance accepting the ESCO model proposed. It was recommended by the Government that an alternative model be proposed to which UNDP complied, developed and submitted. UNDP is still awaiting feedback on the alternative model of how an ESCO-type sustainable finance mechanism to support and advance sustainable energy could work.</p> <p>With PCJ being a responsible party, its dissolution has created a void in project partnership and implementation. However, UNDP will continue to use adaptive management techniques to ensure that the project outputs and targets are achieved. Greater emphasis will be placed on accelerating delivery under Component 3, including addressing the outstanding ESCO model issue. Efforts will be made to get the EE and RE pilot projects back on track as soon as it is safe to do so. In this final few months of the project, UNDP will also advocate for appropriate level representation on the Project Board as well as more frequent meetings. This will be critical for project success. There is still much</p>	

	<p>work to do to ensure that the remaining 45% of the project funds are spent and the outputs are achieved.</p> <p>Given the improvement in project spend as well as achievement of deliverables my overall assessment of the project is that it is Moderately Satisfactory.</p>	
Role	2020 Development Objective Progress Rating	2020 Implementation Progress Rating
GEF Operational Focal point	<i>(not set or not applicable)</i>	<i>- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -</i>
Overall Assessment	<i>(not set or not applicable)</i>	
Role	2020 Development Objective Progress Rating	2020 Implementation Progress Rating
Project Implementing Partner	<i>(not set or not applicable)</i>	<i>- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -</i>
Overall Assessment	<i>(not set or not applicable)</i>	
Role	2020 Development Objective Progress Rating	2020 Implementation Progress Rating
Other Partners	<i>(not set or not applicable)</i>	<i>- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -</i>
Overall Assessment	<i>(not set or not applicable)</i>	
Role	2020 Development Objective Progress Rating	2020 Implementation Progress Rating
UNDP-GEF Technical Adviser	<i>(not set or not applicable)</i>	<i>(not set or not applicable)</i>
Overall Assessment	<p>This is the last PIR of project 4900, which objective is to advance a low carbon development path and reduce Jamaica's public sector energy bill through the introduction of renewable energy (RE) and improvement in energy efficiency (EE) in the health sector. The project throughout its life has encountered many challenges and delays which were exacerbated considerably by COVID19 pandemic. The original closure day of the project was July 2020, but critical activities directly linked to COVID crisis preparedness and response in health facilities were still pending completion, so an 8-month extension was granted until March 2021.</p> <p>The arrival of the COVID-19 Pandemic in March 2020 severely impacted project implementation and timelines. By July only one health facility (May Pen Hospital) had received a solar PV system (not commissioned) and three facilities (National Chest, Bellevue and Sir John Golding) were retrofitted with energy efficient LED Lighting Solutions. Procurement notices for energy efficient lighting retrofits were postponed given the health risk posed to the project team including consultants and contractors who could not conduct site visits at health facilities during peak of the pandemic. This force majeure second extension was granted to provide the opportunity of the project to</p>	

complete the RE and EE solutions installations safely at 12 health facilities. The additional time shall also ensure that the key components and outputs of the project would be properly institutionalized within the various partner organizations (including Ministry of Health, which is requesting the extension from government side).

The pending completion of pilot projects that have already initiated in terms of installation, commissioning, measurement and verification, but lack the final stage of implementation, include 1) a combined 150kWGrid-tied solar PV systems at three (3) public health facilities; 2) Energy efficient lighting solutions at the six (6) public health facilities; 3) Solar Water Heaters in three (3) targeted public health facilities.

Project energy production is 250 MWh/yr according to 2020 PIR reporting. Once the new solar systems arrive and are installed the final number can be defined, but targets of PRODOC will probably not be achieved because of the setbacks related to component 3 with PCJ. After completion of pilots project must also estimate the overall number of beneficiaries of project' activities, including users of health facilities, participants in capacity development activities (maintenance, energy management, M&V, etc). CO2 emissions should also be reported taking in consideration the lifetime of the technology (ca. 20 years) and not only yearly emissions reductions. Energy projects very often only present concrete results related to energy generation or consumption reduction in the last years of implementation and this in not necessarily bad if these results are verified and technology lifetime results are presented. At this point of implementation it is very important to structure an exit strategy that addresses the sustainability of project's activities.

Despite of general delays for project finalization and some setbacks related to the ESCO and performance contract scheme with PCJ, project is generally on track to achieve its end-of-project targets by the extended project closure date with minor shortcomings. In the last year project has advanced well in adaptive management measures and RTA in line with project team considers DO Rating as moderately satisfactory.

Attention is now turning to longer term recovery plans that seek to repair the economic damage being caused by Covid-19 to minimize job losses and even help to create new jobs. Decisions made now will inevitably shape infrastructure and the energy sector for decades in Jamaica, as government is seeking solutions on diverse sectors to responding to the economic crisis generated by the pandemic. The reparation of these socio-economic damages causes by COVID should be based on longer-term recovery plans and renewable energy/energy efficiency poses a great potential to decrease Jamaica's vulnerabilities to external energy prices. These policy measures should be based in strong socio-economic impact assessments, risk assessments and other feasibility analysis for evidence based policy making towards building back better the economy. Many of these assessments have been undertaken by the project and while it hasn't been well received in the past due to other other priorities, new business models for energy efficiency might be considered as a possible path for economic recovery. A final high-level dissemination of projects results, and deliverables might be a strategy to discuss these topics with different stakeholders and decision makers.

Significant progress has been reached in outcome 1 and outcome 2 and the most important targets have been already achieved or partially achieved. For Component 3, no EPC models have been implemented however a roadmap for a sustainable ESCO industry was developed. PCJ (Petroleum Company of Jamaica) as responsible party, was responsible for the implementation of this component. As the super ESCO, PCJ's vision was to manage, implement and monitor the Energy Performance Contracts issued under the Programme.

However, the Ministry of Finance and Planning (MOFP) was not amenable to that mechanism through the PCJ. In January 2020, the Government of Jamaica finally dissolved the PCJ, however project had already adapted and repurposed the grants towards the implementation of pilots that could generate learning and the impacts (partially) envisioned originally in project design.

Three health facilities have been retrofitted with LED Lighting Solutions. The remaining (3) facilities are expected to be retrofitted with LED Lighting solutions by December 2020. One health facility has received a 76kW PV System. Two other health facilities are expected to receive a 75kW and a 15kw System by December 2020. However, implementation of Component 3 which carries majority of the project's budget allocation is significantly delayed.

In line with budget revisions, risk management should be carefully monitored via PIMS+ at this stage of implementation. In this year PIR project has identified 4 risks (1 political related to PCJ and three operational mainly connected with possible further delays connected to COVID-19). At this stage it is key to closely monitor of the risks categorized in PIMS+ as : safeguards risks; delays in project implementation and performance quality. Project team and CO should carefully monitor and discuss notably risks with RTA to identify the most appropriate mitigation strategy. These risks must be assigned a rating by the user of moderate, substantial or high and are pulled into the risk dashboard and can also be escalated as needed.

Safeguards monitoring should be commensurate with project's risk monitoring actions. Therefore, project should include safeguards monitoring and reporting requirements in the project's overall monitoring plan, mainly considering safety risks and health risks in the current context. These M&E activities should make sure stakeholders are involved in implementation and that complaints and grievances are tracked and reported transparently. Rescreening of safeguards shall be applied if substantive changes alter project's risk profile. The careful management of project's safeguards in this phase of implementation is critical for successful implementation and achievement of objectives and non-compliance with safeguards can lead to a complaint and an investigation by UNDP

RTA in line with project team rates implementation progress for this 2020 PIR as moderately satisfactory, considering the contingency plan provided for the extension. However, the cumulative delivery against PRODOC by the time of the PIR review was not even 60% and this has to improve considerably in the near future. Project should start already to compile the evidences and materials for the Terminal Evaluation as it might be necessary to implement it remotely, even with flexibilization of mobility restrictions. The TE TOR must be revised by the regional team before publication, which must take place at least 3 months before project operational closure.

H. 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: <i>not available</i>
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.
<i>(not set or not applicable)</i>
Atlas Gender Marker Rating
GEN1: some contribution to gender equality
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: No
Improving the participation and decision-making of women in natural resource governance: No
Targeting socio-economic benefits and services for women: No
Not applicable: Yes
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 results of the project are not directly linked to gender equality and women's empowerment. However, UNDP ensured that women benefited from capacity development interventions such as training in RE and EE.
Please describe how work to advance gender equality and women's empowerment enhanced the project's environmental and/or resilience outcomes.
Not Applicable

I. 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.

SESP: <i>not available</i>
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.
<i>(not set or not applicable)</i>
1) Have any new social and/or environmental risks been identified during project implementation?
No
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.
The project does not pose any perceived social and environmental risk.
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
If any existing social and/or environmental risks have been escalated during implementation please describe the change(s) and the response to it.
Not applicable
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.
Not Applicable
If yes, please upload the document(s) above. If no, please explain when the required documents will be prepared.
Not applicable
4) Has the project received complaints related to social and/or environmental impacts (actual or potential)?
No
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)

J. Communicating Impact

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.)

A 75kWp solar system valued at USD186,000 has been installed at the May Pen Hospital, Jamaica under the UNDP GEF5 Energy Project. This system will inject power into the Administration building's electricity network. The system has an annual estimated production of 116035kW. With an anticipated cost reduction of approximately 3.5Million Jamaican Dollars, the Hospital through the Ministry of Health and Wellness will be able utilize this monetary savings to further improve healthcare services at the hospital and greater reduced energy consumption and operational cost during this COVID19 Pandemic.

Knowledge Management, Project Links and Social Media

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 library' button in the top right of the PIR.

UNDP & PCJ pilot innovative Energy Sector Company (ESCO) model to reduce energy costs in public hospitals:

<http://www.jm.undp.org/content/jamaica/en/home/presscenter/pressreleases/2016/11/30/undp-pcj-to-reduce-energy-costs-in-public-hospitals.html>.

<http://www.jm.undp.org/content/jamaica/en/home/presscenter/articles/2019/jamaica-set-to-pilot-mechanism-to-stimulate-affordable-renewable.html>

Project Location Data

Provide the coordinates for the project's geo-location sites. Provide the coordinates in decimal degrees (Longitude and Latitude). If you are not able to provide the coordinates in decimal degrees, you can alternatively provide them in the Degrees, Minutes, Seconds format. If you have this information stored in a GIS file, upload it below (e.g. shapefile, kmz/kml, or csv). If the project has multiple sites, please attach an Excel file with the coordinates for each site in either decimal degrees or in degrees, minutes, seconds format.

Please attach the GIS data. Any of the following formats are acceptable: shapefile (.shp)*,

<p>.kmz, .kml. If helpful, see here a quick note on how to gather geo-reference info. *Note that a shapefile is composed of several files: a .shp file should be zipped in a folder accompanied by the file extensions: .shx, .sbn, .prj, .dbf, .cpg, .sbx, .xml.</p>
<p>If the project has multiple sites, please attach an Excel file with the coordinates for each site in either decimal degrees or in degrees, minutes, seconds format.</p>
<p><i>(not set or not applicable)</i></p>
<p>Provide geo-location in longitude, latitude, format.</p>
<p>If you have this information stored in a GIS file, please upload it below (e.g. shapefile, kmz/kml, or csv).</p>
<p>17.9733526</p>
<p>Longitude</p>
<p>-77.2598832</p>
<p>Alternatively, provide geo-location in degrees, minutes, seconds format. Please also provide information on what the coordinates point to in the space provided.</p>
<p><i>(not set or not applicable)</i></p>
<p>Minutes</p>
<p><i>(not set or not applicable)</i></p>
<p>Seconds</p>
<p><i>(not set or not applicable)</i></p>
<p>Coordinates description</p>
<p>May Pen Hospital - 75kW grid-tied solar PV System installed and is to be commissioned</p>

K. Partnerships

Partnerships & Stakeholder Engagement

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?
No
Does the project work with any Indigenous Peoples?
No
Does the project work with the Private Sector?
Yes
Does the project work with the GEF Small Grants Programme?
Yes
Does the project work with UN Volunteers?
Yes
Did the project support South-South Cooperation and/or Triangular Cooperation efforts in the reporting year?
No
CEO Endorsement Request: PIMS 4900 Jamaica CEO ER 14-mar-2016.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.
<p>Monthly updates are disseminated to key project stakeholders including updated risks, lessons learned and opportunities. The project was challenged with getting effective and timely support from some stakeholders. The Resident Representative of UNDP wrote to members regarding their participation in meetings and in lobbying for the project outside of meetings. Despite this effort, much improvement was not realized in terms of greater participation by members of the Project Board. A lesson gleaned is that it is important to have appropriate decision-makers from the respective agencies on the Project Board in order to quickly resolve issues and advance project activities. In some cases representation on the Project Board were not decision-makers.</p> <p>Of the 16 Stakeholders mentioned in the Prodoc only six have participated in the Project to date, these are: Ministry of Science, Energy and Technology (MSET), Petroleum Corporation of Jamaica, Government Electorate Inspectorate, Jamaica Public Service, Jamaica Productivity Centre and the Bureau of Standards Jamaica. These stakeholders proved valuable in providing key technical input or advice for the formulation knowledge products under the project such as solar PV guidelines, and key</p>

outputs under the ESCO Consultancy. The project was also able to garner the participation of other stakeholders such as: Ministry of Health and Wellness and associated Regional Health Authorities - supported in coordination of Sustainable Energy Training and in implementing RE and EE Projects at the sites, Ministry of Education through the Jamaica Tertiary Education Commission - supported UNDP in liaising with the respective tertiary institutions to get feedback on the local sustainable energy education, Planning Institute of Jamaica supported the project in consulting with the Ministry of Finance to resolve issues surrounding the ESCO Model initiative.

L. 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.