

TC DOCUMENT

I. Basic project data

- Region: Caribbean Region
- Name: BRIDGE in Sustainable Energy and Information and Communication Technologies
- TC Numbers: RG-T2179 (GDF); RG-T2373 (SECCI), and RG-T2374 (KPR)
- Team Members: Adriana M Valencia (INE/ENE) Team Leader, Rafael Anta (IFD/CTI) Alternate Team Leader, Christiaan Gischler (INE/ENE), Lumas Kendrick (ENE/CJA), Claudia Piras (SCL/GDI), Guillermo Antonio Eschoyez (LEG/SGO), and Maria Teresa Soto-Aguilar (VPC/FMP).
- Indicate if: Client support.
- Reference to Request: Not Applicable -Regional
- Date of TC Abstract authorization: June 13th, 2013
- Beneficiary: Universities and technical/vocational centers in Barbados, Jamaica, and Trinidad and Tobago.
- Executing Agency and contact name: INE/ENE
- IDB Funding Requested: US\$900,000 (US\$600,000 -SECCI, US\$200,000 - GDF, US\$100,000 - KPR).
- Local counterpart funding, if any: N/A.
- Other contributions: General Electric, US\$100,000 in kind; Phillips, US\$30,000 in kind; Scottish Development International, US\$68,000 in kind.
- Disbursement period (which includes execution period): 4 years (42 months for execution)
- Required start date: September 2013
- Types of consultants: firm (including University of the West Indies) and individual consultants
- Prepared by Unit: INE/ENE & IFD/CTI
- Unit of Disbursement Responsibility: INE/ENE
- Included in Country Strategy: Yes for Barbados¹; Yes for Jamaica²; Yes for Trinidad and Tobago³ TC included in CPD: Yes
- GCI-9 Sector Priority: Climate change, Gender equality, Integration, and supporting development in small and vulnerable countries,

¹ The IDB Country Strategy with Barbados (2009-2013) lists as an Expected Result of the Strategy the capacity strengthening of the energy sector for “planning and implementation of energy policy”. While this TC does not intend to influence the energy policy, it is expected that the outcome and outputs of the TC will provide some of the capacity needed to carry out the sustainable energy policy that is expected to be implemented. The BA Country Strategy also mentions donor coordination, specifically with the UN and bilateral agencies. The project team will contact these agencies given that they have established an ICT group.

² The IDB Country Strategy with Jamaica (2013-2014) identifies energy as an area of future (2013-2014) dialogue. Specifically, it indicates that the Bank will provide support to the regulatory framework for the development of a sustainable energy sector, as well as support energy efficiency and conservation initiatives. It is expected that this TC will contribute to this goal. Additionally, the Country Strategy notes that Jamaica has severe problems forming and retaining human capital and includes in the Country Strategy Matrix, an objective to enhance quality and access to education. While this TC focuses on education and training beyond primary and secondary education, the training provided and the partnerships to be developed, might contribute to the goal of fulfilling some of the human capacity needs and retaining this capital.

³ The IDB’s Country Strategy with Trinidad and Tobago (2011-2015), mentions as a possible risk to achieving the objectives of supporting a more efficient, sustainable and cleaner energy matrix, the “level of skills and capabilities required to support such a transition”. This TC aims to contribute to addressing this need for human capacity and skill building to meet the demand of these skills in the coming years.

II. Objective and Justification

The **general objective** of the Program “Building capacity and Regional Integration for the Development of a Generation of Entrepreneurs (BRIDGE) in Sustainable Energy and Information and Communication Technologies” (also referred here as “The Program”) is to develop human capital, while encouraging gender equality, to meet the expected future demand for technicians, professionals and entrepreneurs in the sustainable energy (SE) and information and communication technology (ICT) sectors. **The specific objectives** are: (i) to understand the general and gender-specific dynamics of the Caribbean energy labor market in terms of renewable energy (RE) and energy efficiency (EE), (ii) to assess the existing levels of human capital and associated gender gaps within the realm of ICT, and identify unmet skills that are key for improving the ICT ecosystem; (iii) to train young women and men on the development, installation, operation and maintenance of sustainable energy technologies and the development and provision of key ICT services; and (iv) to foster entrepreneurship of both women and men and enable an environment for regional firms to be able to compete in the provision of SE and ICT related services. The **main components** include: 1) Technical and professional capacity baseline analysis; 2) Capacity training and institutional strengthening; 3) Facilitating the academic and professional partnership between companies and trained individuals; and 4) Developing a SE and ICT Innovation and Entrepreneurship platform.

Justification: The demand for energy in the Caribbean region is expected to increase by 3.2% annually in the next two decades (> 80% in this time period)⁴. Similarly, the mix of energy sources (which for the most part has been highly fossil fuel dependent) is likely to be diversified to include more sustainable energy sources⁵ (e.g. energy efficiency and renewable energy), due to concerns and raised awareness over high fossil fuel prices, the uncertainty of available fossil fuel reserves, and to some extent the desire to be more sustainable. With a growing demand for sustainable energy, there will likely be a need for trained labor to fulfill the demand for experienced and skilled technicians, professionals and individuals at various levels, capable of designing, developing, installing, operating, advising, maintaining, and managing the aforementioned energy related systems⁶.

While the energy sector has tended to be mostly male dominated in both Latin America and the Caribbean, the development of the growing sustainable energy sub-sector presents a unique opportunity to foster a gender balanced new professional and technical cadre by encouraging both women and men to become trained and enter the labor force. In the case of higher education in the participating countries, men are actually underrepresented at all levels of education. However women continue to struggle with barriers associated with gender segregation in the labor market and wage gaps. In fact, in Barbados and Jamaica, it has been found that women earn 38% and 52% less than men in the electricity sector, respectively⁷).

⁴ World Bank. 2010. Meeting the Electricity Supply/Demand Balance in Latin America & the Caribbean.

⁵ The concept of sustainable energy refers to the ability to use of energy in a way that meets current needs without compromising the ability of future generations to meet their own energy needs and minimizing harm on the environment. Sustainable energy includes the efficient use of energy resources (including production, use, reduction in transmission losses, and conservation), as well as renewable (e.g. non-depleting) energy, such as wind, solar, hydro, geothermal, waste to energy (e.g. incineration and gasification) and bio-energy (including biofuels and biomass cogeneration such as bagasse, rice husks and wood chips from residual timber processing), and ocean energy (which also produce low, minimal or zero net levels of carbon dioxide/carbon dioxide equivalent emissions (CO₂e))

⁶ The tourism industry is a clear example of a sector that has a growing need for trained individuals in sustainable energy (in tourism agencies and tourism services, such as hotels). In fact, one of the findings of the IDB's CHENACT project is that in-house technical staff is needed to advocate for clean energy implementation.

⁷ As a reference, Barbados' electricity, gas and water sector employs 1.9% women and 2.1% men (Ñopo, Hugo. 2012 New Century, Old Disparities: Gender and Ethnic Earnings Gaps in Latin America and the Caribbean. IDB).

The demand for sustainable energy in Caribbean economies is matched by the increasing demand for ICTs, mostly broadband connectivity, which is crucial for regional and global integration as well as for increasing competitiveness. This was one of the main conclusions from an IDB Caribbean Policy Dialogue on Science, Technology, and Innovation held in 2011⁸. Taking advantage of broadband requires the availability of human capital for developing ICT solutions and services that respond to local and regional needs. For the Caribbean, which is a region characterized by stagnant productivity levels over the last decade, this digitalization would represent significant gains⁹ for the region's economies. Due to the dynamic nature of the sustainable energy and ICT sectors, capacity for innovation will be needed in order to take advantage of rapid developments in energy technologies, financing arrangements and regulatory imperatives. The capacity building needs in these sectors will be assessed through Component I of this TC.

Understanding these similar needs in the Caribbean region and the benefits that are expected to arise from working in parallel and encouraging interaction among the participating countries, this TC is specifically targeted to building upon the ongoing efforts to train high quality individuals by the University of the West Indies. It is expected that the TC will lead to further collaboration between the participating countries and a natural flow of individuals and talents depending on market demand for trained women and men in the region. The TC will aim to strengthen the institutional capacity of the vocational centers and universities that participate in the program, in order to ensure the medium to long term sustainability of the program. The TC will also clearly bring to the attention of the various involved institutions, the possible gaps between demand and supply of trained personnel and the possibly rising availability of individuals with whom to build enterprises.

This proposal is a joint effort between the IDB's Competitiveness and Innovation Division and the Energy Division, along with Caribbean country Governments, private entities, and universities. This collaboration has the purpose of contributing to bridge the gap between the availability and the expected demand for SE and ICT technicians and professionals, who will be crucial in planning, developing and maintaining the envisioned energy matrix diversification of the region, and to promote ICT entrepreneurship. ICT as it relates to energy (i.e. smart grids¹⁰) can help promote integration of renewables and energy conservation. Additionally, this proposal aims to consider gender-sensitive interventions in order to ensure benefits for both females and males. In male dominated sectors such as infrastructure, capacity building is needed to strengthen involvement of women at all levels of infrastructure policymaking, planning, and project development. Increased participation of women in

⁸ The Policy Dialogue on Innovation in the Service Sector, held in Belize on December 5th and 6th 2011, concluded that the Caribbean region would benefit from investment related to developing ICT capacity in the private sector and accelerating the deployment of broadband infrastructure. Specifically, participants, presenters and organizers concluded that "niche private sector investors can be attracted to the region because of the languages, the availability of labor, and efficient and educated workforce, proximity to the United States, tax holidays, etc. The many strengths in the Caribbean offer promise for the future, especially if they can include leveraging green growth and sustainable tourism prospects, near-shoring opportunities, and increasing broadband connectivity in the region."

⁹ Recent estimates show that a 10 percent increase in broadband penetration in developing countries is associated with a 1.38 percentage point increase in economic growth (World Bank, 2010).

¹⁰ According to the IEA, a smart grid is "an electricity network that uses digital and other advanced technologies to monitor and manage the transport of electricity from all generation sources to meet the varying electricity demands of end-users [...]" (IEA 2011 Technology Road Map, Smart Grids). Smart grids are a continuous process of modernizing existing electricity grids and of designing future ones. The smart grid is meant to address a number of key challenges – environmental and economic – that the electricity sector is facing. The use of ICTs and Internet applications are at the centre of this modernization. Smart grids have potential for driving innovation in the ways electricity is produced, managed and consumed (OECS 2012 Digital Economy Paper No. 190, ICT applications for the Smart Grid).

the energy sector and improvement of their status relative to men can help to incorporate gender as an integral part of energy policies and practices and help address the gender segregation and wage gaps that still exist in this area of the labor market.

The initial scope of this Program will be in Barbados, Jamaica, and Trinidad and Tobago¹¹. There are several universities and technical centers in the three proposed countries it is expected that they will benefit from the program. The program in general will be open to IDB member countries and to the Organization of Eastern Caribbean States (OECS) countries¹², through the participation of the GIZ, though this is envisioned for a possible second stage of the Program in which, if successful, the program could get expanded. There are several universities and technical centers in the Caribbean and it is expected that these will participate in the Program. However, the IDB expects to be able to work closely with the University of the West Indies (UWI) during this program, given: a) the University's regional presence and track record of coordinating regionally as an educational institution in the participating countries, the University's experience in carrying out regional programs, its institutional capacity, and its close relationship with the private sector. It is noteworthy, that UWI's Cave Hill Campus in Barbados has completed the process of developing a Master Degree in Energy management and has partnered with Biojet International to create a biofuels laboratory (part of an International Research Institute). The St Augustine Campus has completed the development of a MSc program in Renewable Energy and MSc Power Engineering and Professors have been assisting OLADE with an Executive Professional Development energy sector online program for the Caribbean. The Mona Campus has been running BSc Major in Alternative energy for over eight years and did the studies that generated data required to assess and eventually develop and install 23.7 MW of wind energy in two locations in Jamaica. The Campus has also run a series of public lectures on various aspects of energy. With support from the German Academic Exchange Service (DAAD), the UWI and its partners are engaged in a broad Program that seeks to uncover barriers to rapid growth and wide use of sustainable energy sources. The three campuses have agreed verbally that UWI's Cave Hill Campus will be taking the leadership for spearheading the program.

The Bank's participation in this Program is essential for the mobilization of resources and for the involvement of the private sector in the region that might otherwise not coordinate in the short term to enact a program of this kind. The IDB's Energy Division has established (launched in April 2010) an Energy Innovation Center to promote energy innovation and knowledge exchange by serving as a regional incubator for implementation and funding for technical assistance and capacity building programs. This TC will build on and contribute to this Center.

In addition, this TC will serve as mechanism to offer policy and regulatory support for investment and deployment of SE and ICT, as follows: a) the TC will provide leverage in terms of additional funds, and b) the components of the TC will function as demonstrative activities/actions, both to support needed changes in regulations/policies in these sectors. In fact, the Energy Division is preparing Policy Based Loans (PBLs) that will go hand in hand with what is being proposed in the BRIDGE TC. Specifically, the Second Generation of Reforms

¹¹ Working in each of these countries also makes sense from the fact that: a) Barbados has a sustainable energy framework and a corresponding policy and is currently leading the way in solar water heating, while additionally being in the midst of preparing and installing a grid connected photovoltaic project; b) Jamaica has 23.7 MW of wind; and c) Trinidad and Tobago is encouraging local manufacture and has two IDB approved PBLs on energy and climate change. Note that these three countries have expressed a keen interest in addressing water needs which are intricately linked to energy issues, this perhaps, as a separate project.

¹² Note that the Sustainable Development Unit of Economic Commission for Latin America and the Caribbean, after communications with the IDB, has demonstrated interest in conducting a project related to Component I of the BRIDGE program in various OECS countries.

in Support for Sustainable Energy Framework for Barbados (SEFB) I (BA-L1024) has a Component (IV) titled Capacity Building, Institutional Strengthening and Public Awareness, designated to strengthen institutional capabilities for RE and EE, public education and awareness and training. The PBL has targets for a Public Education and Professional Strengthening Plan for Sustainable Energy approved by Cabinet and Public awareness campaigns to facilitate RE and EE policies in implementation. A similar PBL is also expected to be approved for Trinidad and Tobago in 2014.

This TC is aligned with the IDB's institutional priorities as outlined in the report on the Ninth General Capital Increase in Resources for the Inter-American Development Bank (GCI-9) (AB-2764) as it incorporates a gender perspective and it contributes to the goals of (i) "supporting development in small and vulnerable countries", (ii) "supporting micro, small and medium enterprises", (iii) "support climate change initiatives, renewable energy and the environment", which includes the 'need to increase the knowledge base, strengthen frameworks and build capacity'. In addition, the program is in line with the Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (GN-2609-1) and the Operational Policy on Gender Equality in Development (GN-2531-10). The TC is also in accordance to the Country Strategies of the three participating countries (as detailed in footnotes above).

In addition, given the goal of integrating trained individuals with the industry and potential employers, General Electric, Phillips and Scottish Development International (SDI) are interested in partnering with the IDB in providing training opportunities related to the BRIDGE Program. GE and Phillips have a team of experts that can deliver training related to sustainable energy and innovation. The training can be provided directly in the participating countries or in some of GE or Phillips's field offices. Similarly, GE will make arrangements to provide some students with an opportunity to receive hands-on training through site visits and internships.

III. Description of activities

Component 1. Baseline analysis. The specific level and nature of gender gaps in the English-speaking Caribbean requires verification and quantification so that they can be addressed accordingly. Based on previous analysis (i.e. CARICOM) and further research, this component will consist of a baseline analysis disaggregating the information by gender per participating country to address possible gender based constraints, and disaggregating by income (when possible), including: a) an assessment of current enrolment and graduation rates at technical and professional tracks in Caribbean academic institutions related to SE and ICT; b) the quantity and type of sustainable energy projects and private sector development programs which will require investments in ICT that the countries would expect to implement in the coming decade; c) estimation of the number of professionals and technicians needed to sustain a diversified energy growth and penetration of ICT in the private sector; d) a list of firms and institutions working on SE and ICT issues and employment data; e) a list of competencies that firms are lacking in the professionals and technicians they are seeking to hire in the current employment pool (information on human capital supply and demand, specified by technical centers and universities, to determine the training needs for technicians and professionals for each country); f) estimate possible needs of new human resources and technical services needed in the future arising out of evolving technologies; and g) participatory qualitative analysis of specific curriculum changes and investment needs that may be required in order to get these institutions ready for the demand for SE and ICT trained individuals and increase accessibility for low-income individuals (students and faculty members will be engaged in the process of curriculum reform). This component would provide a detailed assessment for Trinidad and Tobago, Barbados and Jamaica, as well as a regional overview. Duration: 7 months. Component to be financed by IDB, in collaboration with Scottish Development International (SDI).

Component 2. Capacity building and institutional strengthening. This component will finance the hiring of consultants to provide capacity training targeted for technical centers and universities and benefiting professionals, students and teachers. Energy institutions tend to be male-dominated, particularly in the professional posts. Lack of education and technical training constitute an important constraint on women's participation in activities involving energy systems and entrepreneurial activities. Based on the analysis performed in component 1 and the context of each country, the capacity training program will be designed to enhance the participation of women or men in the program, including quotas or some incentives. The program will target a percentage of female beneficiaries, as well as low-income participants, which will be determined based on the baseline analysis conducted in component 1 (since that analysis will be disaggregated by gender and income, when possible). The Program will also benefit from collaboration with the Integration and Trade Sector of the Bank, to use the online teaching platform of the Capacity-Building Program on Integration (RG-T2265) to provide tutored courses related to energy integration; and will also evaluate the possibility to adopt Massive On line Open Courses (MOOC) to provide access to high quality distance learning, as a complement to face to face education. Again, based on the findings of Component I, the component will have these subcomponents: a) training of technical and university teachers in SE and ICT (i.e. collaborating with SDI, GE, Phillips, and possibly the United States' National Renewable Energy Laboratory, Oak Ridge National Laboratory, and Pacific Northwest National Lab); b) training of students (from technical centers and universities) by core professors and visiting scholars (also in collaboration with the above mentioned institutions), promoting mentorship of female students and student participants facing financial hardship; c) design and implement strategies to increase female participation in the labor force in these sectors, including a communication campaign to attract female students, promotion of young women in science awards; d) design and implement university-level support schemes to attract low-income students participation, promotion of awards for excelling low-income individuals; and e) national, regional, and international up to one week field visits to allow students the possibility of learning first-hand from relevant renewable energy facilities (i.e. within participating countries and in other countries, including the Caribbean's Dominica and St. Vincent and the Grenadines), encouraging female and financially constrained student participation. Depending on funding and the findings from Component 1, the expected outputs of this component are: a) at least 9 trained professors (3 per country); b) at least 150 trained technicians and professionals on SE and ICT (50 per country); c) strategy report and design of communication campaign to attract female students; d) design of a award for excelling low income students; and d) ninety students able to visit SE sites (30 per country). It is expected that outcomes will include 40% or more of female beneficiaries. Moreover, it is expected that this component will result in an increase of trained technicians and professionals who will be able to contribute to the sustainable energy knowledge base and the development of SE and ICT related services for the private sector. Duration: 36 months.

Component 3. Academic and professional partnership. This component will create an enabling environment to allow students to carry out part of their studies in national, regional, or international firms or laboratories, through internship assignments. A consulting firm will be hired to coordinate an internship program and workshops/events to facilitate the partnerships and a mentorship program in the workplace for women interns. Like component 2, this component will be designed to enhance the participation of females or males in the program using quotas or incentives based on the analysis performed in component 1 and the context of each country. It is envisioned that there will be at least 20 students per country participating in the internship program and it is expected that 40% or more of the students will be females. This component will include events that will assist students and firms/laboratories to be partnered in internships or jobs. To this end, this component will consist of: a) the provision of a small stipend which will make it possible for the students to conduct their internships; and b) workshops/events to facilitate the partnerships between the students and the firms. The training provided through Component 2 will ideally generate interest in some of the students to conduct some of their internships on ICT related energy aspects. The outputs of this component will be an

increase in the number of students participating in internship programs in national and regional firms. The expected result of this component is better and increased trained sustainable energy personnel in the region and more competitiveness of regional sustainable energy firms. Duration: 36 months.

Component 4. Innovation and Entrepreneurship Platform. This component will provide a space for employers and students to interact regarding internship/employment opportunities and foster ICT and SE innovation and entrepreneurship in order to help grow the base of firms that supply innovative SE and ICT-based services and solutions for the Caribbean private sector, to eventually lead to job creation. The component will support the development of a challenge-driven innovation¹³ program which will provide the space for identifying entrepreneurial opportunities for developing ICT and SE solutions under an open innovation context at the national and regional level¹⁴. The component will fund the following activities: a) design and implementation of a training program on entrepreneurship, challenge-driven innovation, crowdsourcing and crowdfunding addressed to business schools, and technical centers, universities and companies of the prioritized business sectors; b) set up of a job/employer seeker, challenge-driven innovation and crowdfunding virtual platform, together with training to run the services provided by such platform in each beneficiary country; d) pilot the platform with selected companies, private sector associations, and universities; e) identify local institutions for managing the platform; and f) design and implementation of a dissemination plan for scaling up the use of the platform. The platform aims to be sensitive to gender concerns – i.e., make training accessible to women and men, support gender balanced and women’s enterprises and social advancement. Results: an enabled platform that allows businesses and students to connect to find ICT and SE solutions and employment opportunities. Duration: 36 months.

¹³ A challenge is a well-formed problem whose solution has value to a company. Challenge Driven Innovation is an innovation framework that accelerates traditional innovation outcomes to help organizations develop and implement actionable solutions to their key opportunities and challenges. (This is done by leveraging open innovation and crowdsourcing along a defined methodology, process, and tools).

¹⁴ There is a possibility that the IDB will support the [IDEAS Contest](#) at the University level (this may provide opportunities for Universities in the USA, Latin America, Europe, and Asia to collaborate with Universities in the Caribbean to compete).

IV. Indicative Budget (in US\$) – Please refer to Annex I for the Indicative Results Matrix¹⁵

Component	Description	IDB (SECCI, GDF, and KPR Resources)	General Electric, in kind	Phillips, in kind	Scottish Development International, in kind	Total
1. Baseline gap analysis	Production of baseline report (1 on SE and 1 on ICT), including an assessment of institutional strengthening needs.	55,000 (GDF 10,000)			8,000	63,000
2. Capacity training program	a) training of technical and university teachers in SE and ICT; b) training of students, promoting mentorship of female students and student participants facing financial hardship; c) design and implement strategies to increase female participation in the labor force in these sectors, including a communication campaign to attract female students; d) design and implement university-level support schemes to attract low-income students participation, promotion of awards for excelling low-income individuals; e) national, regional, and international up to one week field visits.	400,000 (GDF 80,000; KPR 100,000)	52,000	15,000	35,000	502,000
3. Facilitate the academic and professional partnership between companies and trained individuals	a) Internship placements; and b) workshops/events to facilitate the partnerships between the students and the firms.	180,000 (GDF 60,000)	48,000	15,000	20,000	263,000
4. Innovation Platform	a) Design and implementation of a training program on entrepreneurship, challenge-driven innovation, crowdsourcing and crowdfunding; b) set up of a job/employer seeker, challenge-driven innovation and crowdfunding virtual platform, together with training to run the services provided by such platform in each beneficiary country; d) pilot the platform with selected companies, private sector associations, and universities; e) identify local institutions for managing the platform; and f) design and implementation of a dissemination plan for scaling the use of the platform	50,000 (GEF 30,000)				50,000
Program Management	1 Overall Project Manager	200,000			5,000	205,000
Contingency		15,000				15,000
Total		900,000	100,000	30,000	68,000	1,098,000

¹⁵ The IDB will obtain the written confirmation from each of the donors listed here, indicating their compromise to make their respective contributions under the project.

V. Executing agency and execution structure:

The Executing Agency will be the IDB, through the Energy Division in Washington (INE/ENE) with support of the IDB country offices in Barbados, Jamaica and Trinidad and Tobago. A Program Manager (PM), to be based in one of the participating countries, will be hired under this TC to facilitate the execution of the Program.

This TC is expected to benefit the beneficiary countries as a whole, and in specific it will benefit trained individuals. The knowledge and the improved professional capacity to be delivered with Component 2 are expected to have ongoing benefits after the Program completion. Should the Program lead to positive results, it is hoped that the Governments and participating institutions will continue the program, beyond the time period of the TC. While the internship program is also envisioned to have a support from this TC that will be limited in terms of time and budget, it is expected that, businesses would continue to seek out the skills of trained individuals beyond the life of the Program. Likewise, it is also envisioned that international institutions involved in the Program, will continue to invite students for training or participation in similar programs after Program completion (i.e. NREL, Germany's Transatlantic Renewable Energy Fellowship Program).

Overall Monitoring and Evaluation: 20 months after of Program execution, the IDB will contract an independent consultant to do the final evaluation and audit to evaluate the key Program outcomes. The PM will provide progress reports summarizing results and updates quarterly and submit these to the IDB. There will be a mid-term review when 50% of the funds are disbursed or half of the execution time is accomplished, whichever occurs first. A final progress and monitoring report will be prepared at the completion of the Program period, 90 days from the last disbursement and it will have disaggregated gender information on activities, outputs, outcomes and lessons learned. An ex-post evaluation will be performed to measure the impact in terms of number of trained technicians and professionals, potential new jobs created, % of females trained and in new jobs.

Procurement: For the contracting of consulting firms, the project team will follow the Policies for the Selection and Contracting of Consultants financed by IDB (GN-2350-9) using e-Sourcing; for the contracting of non-consulting services the IDB Corporate Policy and procedures (GN-2303-20); and in the case of individual consultants, the Human Resources selection procedures (AM-650).

VI. Project Risks and issues:

Careful design, close supervision during the critical stages of the activities (i.e. baseline report, student selection and send off for training, curriculum design), and division of tasks should allow for successfully meeting the main objective and specific objectives of the Program without significant risks. The team will work closely with the Project Manager, Consultant firm, and the University of the West Indies to ensure that the deliverables are produced according to the planned scheduled.

VII. Exceptions to Bank policy: This TC does not expect exceptions to Bank Policies.

VIII. Environmental and Social Classification:

There are no envisioned environmental or social risks associated with this operation. It is expected that the project will receive a category C classification. No environmental assessment studies or consultations are required for Category "C" operations. For documents resulting from the use of the toolkit please see: Safeguard Policy Filter Reports (SPF) [IDB Docs #37876463](#); [IDB Docs #37958290](#); & [IDB Docs #37958372](#) and Safeguard Screening Forms (SSF) [IDB Docs # 37877121](#); [IDB Docs # 37958328](#); & [IDB Docs # 37958404](#).

ANNEX I.

Indicative Results Matrix:

Project Component	Expected Outcomes	Expected Outputs
1. Baseline gap analysis - disaggregating, when possible, the information by gender and income per participating country	<ul style="list-style-type: none"> -Increased knowledge and understanding of the availability of technical and professional capacity in sustainable energy (SE) and information and communication technologies (ICT) fields in the participating countries and the Caribbean region. -Improved ability to plan and gear resources in order to meet future demand for human capital and technical services. -Revealing of curriculum changes and investment needs in vocational centers and universities in the fields of SE and ICT. 	<ul style="list-style-type: none"> - One baseline gap analysis report for SE, with a regional overview, one section for each country and with findings, suggesting curriculum changes (if necessary) and possible investment needs to strengthen the capacity of participating institutions and recommendations. - One baseline gap analysis report for ICT, with a regional overview, one section for each country and with findings, suggesting curriculum changes (if necessary) and possible investment needs to strengthen the capacity of participating institutions and recommendations.
2. Capacity building and institutional strengthening	<ul style="list-style-type: none"> -Improved strategies for increasing participation of women in Sustainable Energy and ICT sectors. - Strengthened institutions with knowledge of target needs of training. - Improved capacity of teachers to provide training to students in areas of SE and ICT. - More knowledgeable individuals in fields SE and ICT. 	Depending on the findings from Component 1, the expected outputs of this component are: a) at least 9 trained professors (3 per country); b) at least 150 trained technicians and professionals on SE and ICT (50 per country); and c) 90 able to visit SE sites (30 per country). It is expected that outcomes will include 40% or more of female beneficiaries.
3. Facilitate academic and professional partnership	<ul style="list-style-type: none"> - A more enabling environment for students and employees to connect, intern and find employment. - Increase in the number of students participating in internship programs in regional firms, and ideally an increase in the number of local people employed in sustainable energy positions. - Better and increased trained sustainable energy personnel in the region and more competitiveness of regional sustainable energy firms. 	Depending on funding and the findings from Component 1, the expected outputs of this component are: a) at least 20 students per country participating in the internship program, with 40% or more of the students being females; b) at least 3 workshops/events to facilitate the partnerships between the students and the firms.
Component 4. Innovation and Entrepreneurship Platform	Linkages between students and employers are facilitated and there is more interest and knowledge on supplying innovative SE and ICT-based services and solutions for the Caribbean private sector.	<ul style="list-style-type: none"> -1 enabled Web platform allowing businesses and students to connect to find ICT and SE solutions and employment opportunities. - 1 dissemination plan for scaling the use of the platform. - 1 training program designed and implemented on entrepreneurship, challenge-driven innovation, crowdsourcing and crowdfunding.

ANNEX II. Indicative Terms of Reference for activities/components to be procured

The indicative Terms of Reference can be found under the following link: [IDB Docs # 37955884](#)

ANNEX III. Procurement Plan (& Indicative Schedule)

Excel Document Available in the following link: [IDB Docs # 37955104](#)