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BAHAMAS

PROMOTING SUSTAINABLE ENERGY IN THE BAHAMAS

(BH-T1016)

PLAN OF OPERATIONS

This document was prepared by the project team consisting of: Christiaan Gischler (INE/ENE), Team Leader; Sylvia Larrea (INE/ENE); Camilo López (INE/ENE); Juan Paredes (INE/ENE); Lumas Kendrick (ENE/CHA); Gerard Alleng (INE/SECCI); Sharon Miller (CCB/CBH); and Hyun Jung Lee (LEG/SGO); under the supervision of Leandro Alves (INE/ENE).

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BASIC SOCIOECONOMIC DATA

For basic socioeconomic data, including public debt information, please refer to the following address:
http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata

ELECTRONIC REFERENCES	
Renewable Energy Resources Potential – Islands of The Bahamas	IDBDOCS#1777044
Terms of Reference	
- Assessment of the Renewable Energy Potential in the Bahamas	IDBDOCS#1786105
- Design and Implementation of an Energy Efficiency Program	IDBDOCS#1786113
- Design of Waste to Energy Projects	IDBDOCS#1786121

ABBREVIATIONS

BEC	Bahamas Electricity Corporation
BEST	Bahamas Environment, Science & Technology Commission
CCB/CBH	IDB Country Office in Bahamas
CDM	Clean Development Mechanism
CERS	Carbon Emission Reductions
EE	Energy Efficiency
ESP	Energy Sectoral Policy
ESR	Environmental and Social Review
GEF	Global Environment Facility
GHGS	Greenhouse Gases
GOBH	Government of Bahamas
HFO	Heavy Fuel Oil
IDB	Inter-American Development Bank
INE/ENE	Energy Division of the Infrastructure and Environment Department
MF	Ministry of Finance
MOTE	The Ministry of the Environment of the Bahamas
OTEC	Ocean Thermal Energy Conversion
PM	Project Manager
RE	Renewable Energy
SECCI	Sustainable Energy Climate Change Initiative
TC	Technical Cooperation
TOR	Terms of Reference
WE	Waste to Energy

PROMOTING SUSTAINABLE ENERGY IN THE BAHAMAS
(BH-T1016)

I. EXECUTIVE SUMMARY

Beneficiary Country:	The Commonwealth of The Bahamas
Team Leader/Members:	Christiaan Gischler (INE/ENE), Team Leader; Sylvia Larrea (INE/ENE); Camilo López (INE/ENE); Juan Paredes (INE/ENE); Lumas Kendrick (ENE/CHA); Sharon Miller (CCB/CBH); Gerard Alleng (INE/SECCI); and Hyun Jung Lee (LEG/SGO); under the supervision of Leandro Alves (INE/ENE)
Executing agency:	The Ministry of the Environment of the Bahamas (MOTE)
Target Beneficiaries:	The main beneficiaries are the governmental institutions of the Government of Bahamas (GoBH), namely the Bahamas Electricity Corporation (BEC); The Bahamas Environment, Science & Technology Commission (BEST); MOTE; and The Ministry of Finance (MF).
Financing:	IDB (SECCI): US$ 750,000 Local: US$ 187,500 Total: US$ 937,500
Objectives:	The general objective of this project is to promote and support sustainable energy, including Renewable Energy (RE), Energy Efficiency (EE), Waste to Energy (WE) and energy conservation programs in order to ensure a sustainable development in the Bahamas, providing alternatives to minimize the dependency on fossil fuels.
Execution timetable:	Execution: 12 months Disbursement: 15 months
Special contractual conditions:	The appointment of the Project Manager (PM) will be a condition for the first disbursement (¶5.4).
Exceptions to Bank Policies and Procedures:	None
Environmental and social review:	The ESR Secretariat reviewed the TC profile on September 9, 2008. The TC has been classified as a "C" according to the Safeguard Classification Tool.
Coordination with Other Donors:	Not applicable

II. BACKGROUND AND JUSTIFICATION

2.1 The Commonwealth of The Bahamas (The Bahamas) comprises approximately 700 islands and cays with a total land area of around 4,400 square miles/ 11,400 square kilometers spread over 100,000 square miles of ocean.

2.2 The total population of the country is around 310,000, of which 85% reside in the main islands of New Providence and Grand Bahama (69% reside in New Providence, mostly in and around the capital city of Nassau; 16% reside in Grand Bahama, in and around Freeport, the Bahamas' second city). The remaining 15% of the population is scattered among the other 28 inhabited islands.

2.3 The commercial electricity generation system in The Bahamas is based on thermal plants powered by petroleum products and operated by The Bahamas Electricity Corporation (BEC). BEC is a government-owned public corporation responsible for the generation, transmission and distribution of electricity in The Bahamas and serves approximately 85% of all electricity consumers in the nation. About two thirds of the country's population resides on New Providence and Paradise Islands, which is home to the capital city of Nassau. BEC's supply extends to all the major islands of The Bahamas, with the exception of Grand Bahama and Inagua Islands.

2.4 Altogether, BEC operates 29 generating plants comprised of 28 diesel engine stations, and one gas turbine station, with a combined capacity of 438 MW. National power demand is growing 3% to 4% per year. In 2007, Heavy Fuel Oil (HFO) provided the energy for about 68% of the power produced.

2.5 In 2005, the Bahamas imported some 6.3 million barrels of petroleum fuels for domestic energy purposes. The Bahamas uses daily some 26,000 barrels of imported petroleum to meet energy needs. The increasing volatility and high prices are negatively impacting on the economic development goals of the country.

2.6 The increase in the cost of oil, coupled with the increased national demand for energy, has generated a huge economical burden for the Caribbean in general and in particular to The Bahamas. The Bahamas, similar to any of the Caribbean islands, could benefit significantly by incorporating Renewable Energy (RE) as well as Waste to Energy (WE) and Energy Efficiency (EE) programs into their energy matrix. This would lead to significant benefits including a drop in the import of fossil fuels, generating important savings and energy security to the nation, and most importantly it would lead to a decrease in carbon emissions. The latter is especially important given that the annual average emission of 6.7 tons of CO2 per person makes The Bahamas among the highest per capita emitters of Greenhouse Gases (GHGs) in the world. This could generate an interesting potential to sell Carbon Emission Reductions (CERs) through the Clean Development Mechanism (CDM) developed under the Kyoto Protocol.

2.7 The Bahamas has resources that could be used to generate electricity, such as solar and wind power, waste and even wave or tidal power. The technical assistance provided under this project will study what are the options, costs for implementation and will provide a set of alternatives to help the GoBH and BEC in their decision making process to achieve sustainable energy (technically and financially) in their country. In a parallel effort, the Inter-American Development Bank (IDB) is preparing a Technical Cooperation (TC) with the Infrastructure Fund (BH-T1012) to upgrade and strengthen the capacity of the MOTE which is the entity with responsibility for the Energy Sector in The Bahamas, as well as to provide alternatives to minimize The Bahama´s dependency on fossil fuels.

2.8 The GoBH is also requesting funds from Global Environment Facility (GEF) to finance pilot/demonstration projects both in RE and EE (BH-X1001). The IDB will be implementing agency for the GEF funded project.

2.9 This TC aims to develop, promote and support sustainable energy programs in Bahamas, and its opportunities to claim carbon credits as a response to the GoBH request of technical assistance to the IDB. This TC will contribute to energy and environmental sustainability of Bahamas, therefore it is eligible to be financed with funds of the Sustainable Energy Climate Change Initiative (SECCI).

2.10 The Bank's Country and Sector Strategies: The Bank's country strategy for The Bahamas for 2003-2007 (document GN-2290-1) has four principal areas of strategic focus: (i) sustaining economic growth and private sector development; (ii) promoting social development and equity; (iii) improving environmental management and natural resources conservation; and (iv) public sector modernization. This TC broadly supports the pillars of the Country Strategy in areas (i) and (iii) and is also consistent with the goals of the Energy Sectoral Policy (ESP) of the IDB because it: (i) develops alternative sources of energy, especially from renewable resources; (ii) reduces and/or replaces the utilization of hydrocarbons in the production of energy; (iii) promotes the efficient use of energy; and (iv) creates and/or strengthens the institutional and technological base of the energy sector.

2.11 This TC is also consistent with the pillar of "Infrastructure for Growth and Environmental Sustainability" of the Country Strategy 2008-2012 for The Bahamas, currently in preparation, as confirmed with the GoBH during the Policy Dialogue Mission conducted in October of 2008.

2.12 This TC is also in accordance with some of the activities described in the ESP because it aims to improve the efficiency in the use of energy in the various sectors of economic activity and also studies the possibilities of utilizing new sources of energy, including research toward adapting energy production procedures, which, because of their technological and socioeconomic characteristics, may signify an alternative source of energy for the future of Bahamas.

III. PROGRAM DESCRIPTION

A. Program goal and purpose

3.1 The general objective of the this project is to promote and support sustainable energy, including RE, EE, Waste to Energy (WE) and energy conservations programs in order to ensure a sustainable development in the Bahamas, providing alternatives to minimize the dependency on fossil fuels.

3.2 The specific objectives of this project are to: (i) provide technical assistance to the GoBH to achieve EE in public buildings, residential sector and commercial sectors, and implement demonstration projects; (ii) explore alternatives for RE and implement pilot projects; (iii) support the GoBH with a WE program; and (v) institutional strengthening and dissemination of findings.

B. Activities

3.3 **Component I – Design and Implementation of a National Energy Efficiency Program:** The goal of the EE program as set out in the draft National Energy Policy is to reduce the fuel needed to generate electrical energy by increasing efficiency in a number of areas ranging from use of solar water heaters, increasing building EE, and more efficient lighting and cooling. This component will address the following activities:

a. It is estimated that 90 per cent of households in The Bahamas uses electric water heaters. In addition, many of the hotels, which serve millions of guests annually, use electric water heaters. While there is no assessment as to the amount of power used to provide heated water, based on experience from elsewhere in the Caribbean, the use of solar water heaters delivers significant energy saving. In the case of Barbados, it is estimated that some 130,000 barrels of petroleum are saved annually. The goal is to demonstrate the benefits and costs of solar water heaters as an alternative to electric water heaters. This sub-component will: (i) asses the potential for a viable household solar water heater program, identifying barriers that exist and options for addressing them, including institutional arrangements; (ii) feasibility of institutional solar hot water programs, e.g., hospitals, schools; and (iii) evaluate the risks posed to solar water heaters for tropical storms and hurricanes and mitigation measures.

b. Designing an EE program by: (iv) undertaking a sample audit of hotels to identify the opportunities for energy savings; (v) perform sample household audits and design a program to reduce energy consumption; (vi) audit of government offices and institutions for energy saving opportunities; and (vii) assess the potential for using cold ocean water for providing cooling services in hotels.

c. Evaluate institutional capacity, current policies, imports tariff regime and regulations to see what changes should be introduced to improve EE by: (viii)

reviewing current institutional capacity in the energy sector and make recommendations to implement the EE program; (ix) review the existing regulation and building codes for new commercial and domestic buildings; (x) identify the policy and/or tariff reform needed to provide incentives for EE and disincentives for inefficient appliances and equipment; and (xi) define the role of BEC, BEST, and the MOTE in the implementation of the EE program.

3.4 **Component II – Assessment of the RE potential in The Bahamas**: The RE resources vary significantly between islands based on location and size (see electronic reference: "RE resources potential – islands of The Bahamas"). This component will asses the following RE sources:

a. **Design of solar energy assessment initiative:** The objective of this sub-component is to: (i) asses and demonstrate the effectiveness of Solar Photovoltaic (PV) panels with net metering connected to the grid and its relative cost-benefits in providing electrical services in isolated locations; and (ii) identify locations where solar PV could be feasibly deployed and identify the islands of The Bahamas where land and solar radiation level provide opportunities for solar thermal power facilities.

b. **Design of a wind monitoring assessment initiative:** Due to the lack of systematic wind monitoring data, no reliable assessment has been made to support the decision by the GoBH to invest in wind energy. A monitoring program on Eastern Bahamas and Cat Island would provide the baseline information to evaluate the feasibility of wind energy in The Bahamas. The goal is to determine the feasibility of wind resources to provide power to the population of the Family Islands. This sub-component will: (i) design and implement a wind monitoring program for the Eastern Bahamas islands with wind energy potential, based on the NOAA information; (ii) identify policy and institutional capacity changes that would be required to facilitate the introduction of wind power into the grids on these islands; and (iii) develop a pilot project on two to three Family Islands, in an institutional or private sector context where the performance, benefits and costs can be monitored.

c. **Design and implementation of a bioenergy research, development and demonstration program:** In 2005 some 3.6 million barrels of diesel oil were imported for use both in transportation and power generation. Based on advances in thermal conversion of high cellulose and processing of algal biomass, The Bahamas has two bioenergy options that could potentially reduce the demand for imported HFO and diesel oil for use in power generation and transportation. These sub-component will: (i) identify and delineate large contiguous land areas with appropriate soils and rainfall regime suitable for cultivation of biomass crops, primarily on the islands of Abaco, Andros, Grand Bahama and Eleuthera; (ii) perform feasibility studies for the bioenergy projects that could be developed on lands with areas greater than 4,000 acres with baseline yield of 20 tons per acre, including environmental impact assessment considerations on the areas; (iii) identify and delineate wetlands areas that could be used for the commercial production of algae as feedstock for biodiesel and

develop a commercial research and development project for the production of biodiesel from algae; (iv) asses the availability of used edible oil and fats used in restaurants, hotels and cruise ships that could be collected; and (v) identify any policy changes or regulation regimes that would be needed to facilitate the implementation of bioenergy projects.

d. **Ocean Thermal Energy Conversion (OTEC)**: The generation of energy from the ocean using the thermal difference between the surface of the ocean and the 4-6 degrees cold water at depths of about a 1,000 meters is referred to as OTEC. To asses the potential of OTEC as a renewable source of energy for The Bahamas this sub-component will: (i) collect and analyze ocean surface temperatures and coastal bathymetry at different locations of The Bahamas; (ii) determine sites where wave and tidal gages should be installed in order to collect baseline data to determine energy potential and conducting a pre-feasibility study; (iii) perform pre-feasibility study on identified OTEC sites for the production of power and water; and (iv) identify any environmental risks to the marine environment and potential mitigation measures.

3.5 **Component III - Development of WE Projects:** This Component aims to provide the basis for the GoBH to decide on the best design and implementation strategy for the production of energy from waste in The Bahamas, with focus on New Providence and Grand Bahama islands. This component will: (i) identify the solid waste stream on Grand Bahama and New Providence islands to determine quantities and periodicity to determine potential as fuel for power generation; (ii) identify the best suited technology that would generate maximum economic benefits for a WE plant (integrated solid waste and energy generation plant); (iii) assess the quantity, composition and flow of land fill gas that could be developed from the old dump at Harrold Road land fill, and whether the quantity of gas could be feasibly converted into power; (iv) evaluate the economic viability of a power generation facility that would operate on a combination of land fill gas (biogas generated in the facility either in the land fill or the WE plant) and solid waste derived fuel; (v) assess and prepare report on the potential of solid waste from the Family Islands, to be used as waste derived fuel for the New Providence WE plant; and (vi) review of current environment policies and regulations to identify what changes would be needed to for the establishment of WE facilities.

3.6 **Component IV– Institutional Strengthening and Dissemination of findings:** This component will assist the MOTE, BEST and BEC to strengthen their technical and institutional capacity, facilitating the transfer of technology and information, as well as the sharing of experiences. It will also finance at least two workshops to validate and disseminate the findings of this TC, helping the MOTE to identify the interested sectors (the affected community in particular) and develop communication and participation strategies during project development and implementation. The MOTE in coordination with the GoBH, will implement a long-term public education and awareness strategy for sustainable energy in the country.

IV. COST AND FINANCING

4.1 The cost of this TC to be financed with funds of SECCI is estimated as US$750,000. As described in Paragraph 4.24 of document GN-2435-6, SECCI funds may finance, on a non-reimbursable recovery basis, the required studies (pre-feasibility, feasibility, environmental and social studies, etc) to develop RE projects (such as small hydros, wind, solar, geothermal, wave energy, and methane recovery form landfills, among others), and EE activities. SECCI is the only fund to support these kinds of studies for such type of projects. The program will also include local counterpart funding in cash for US$187,500.

Table IV-I – Summary Cost (in US$)

Component	Financing		
	IDB (SECCI)	Local	Total Funding
	(US$)	(US$)	(US$)
Component I - Design and Implementation of a National Energy Efficiency Program	285,000	50,000	335.000
Component II - Assessment of the RE potential in The Bahamas	210,000	50,000	260,000
Component III - Development of WE Projects	145,000	--	145,000
Component IV – Institutional Strengthening Dissemination of findings	40,000	37,500	77,500
Project Management and Supervision	60,000	40,000	100,000
Audits and Contingencies	10,000	10,000	20,000
TOTAL	**750,000**	**187,500**	**937,500**
Percentage	**80%**	**20%**	**100%**

V. EXECUTING AGENCY AND MECHANISM

5.1 Executing Agency: The MOTE will be the Executing Agency of this TC. The selection and contracting of consulting services financed with SECCI resources will be a responsibility of the MOTE.

5.2 Executing mechanism: The project will be executed under the coordination of the Energy Division of the Infrastructure and Environment Department (INE/ENE). The consulting services will be carried out by an international consulting firm or association of firms. The firms must associate with local firms and/or local individual consultants. The MOTE will participate in the technical selection committees and will be in charge of coordinating logistical support and facilitating access to information. As beneficiaries of this TC, the MOTE and BEC will provide counterpart staff and will review the technical reports.

5.3 In order to facilitate the coordination and execution of this program this TC will require a Project Manager (PM) that will have to be part of the MOTE. The PM

will also coordinate the activities of TCs BH-T1012 and BH-X1001. The PM will be responsible for overall project guidance, access to key stakeholders, orderly implementation of the program, the selection of the consulting firm(s) that will carry out the four components of the TC, revision of the products, budget administration, logistics, local support and coordination between BEC, BEST, MOTE, MF and INE/ENE and the consulting firm(s).

5.4 The appointment of the PM will be a condition for first disbursement of the TC funds.

5.5 Execution period and disbursement schedule: The execution period for this TC will be 12 months, and the disbursement period 15 months running from the effective date of the relevant agreement.

5.6 Procurement and program implementation readiness: The procurement of consulting services will be carried out in accordance to the policies for Selection and Contracting of Consultants financed by the IDB (document GN-2350-7). The procurement plan is presented in Annex I.

VI. MONITORING AND EVALUATION

6.1 Monitoring: The work of the consulting firm(s) and its compliance with the Terms of Reference (TOR) for this project will be monitored by the MOTE in close coordination with INE/ENE.

6.2 Technical and basic responsibility: Technical and basic responsibility for the project rests with the MOTE. The IDB Country Office in Bahamas (CCB/CBH) and INE/ENE will also conduct technical supervision and provide additional support. This includes the procurement of studies commissioned with TC contribution resources, technical supervision of the TOR, the performance of consulting engagements, and review of the technical quality of all studies financed under this TC, regardless of the source of financing.

6.3 Progress and final reports: Intermediate and final reports of each study will be submitted to the MOTE. The MOTE will distribute the reports to the IDB. The MOTE and the IDB will submit comments within 2 weeks after receiving the reports. The MOTE will be responsible for approval of the final reports.

VII. PROGRAM BENEFITS AND RISKS

7.1 Benefits and beneficiaries: This TC contributes to the sustainable development process of the Bahamas, mainly in two areas, the energy sector and the environment, with an overall positive effect on the economy. On the energy sector side, it helps diversify the energy matrix introducing an appropriate regulatory and technical framework for the adoption of RE, WE and EE practices that foster the efficient use of energy resources. The adoption of RE also improves the

energy security profile of the country by augmenting the number of sources used for energy supply, but most importantly by introducing the use of local and abundant resources like wind, solar, OTEC and bioenergy. On the environmental side, the use of RE and EE practices will help reduce greenhouse gas emissions from such activities like power generation, transportation and appliance and facilities operation. At the same time some revenues could be earned from emission reduction transactions in the international carbon finance markets. The net impact of these measures on the economy will be reflected on the energy bill that is highly dependant on oil and gas international prices and fluctuating supply.

7.2 The beneficiaries are set to be the MOTE, BEC, MF and BEST.

7.3 Risks: The major risk for this TC is that if in the future oil prices drop significantly the initiative loses momentum and the efforts to switch to sustainable energy are abandoned. However, the GoBH considers sustainable energy as way to hedge against volatile oil prices. Furthermore, the government has shown a strong commitment with the implementation and promotion of the activities described in this project. The adoption of RE, EE and WE are among the top priorities of the central government and have been sufficiently addressed and their importance underscored in the country's energy policy. The project team, together with the GoBH, is mitigating this risk with the parallel application to GEF funds for the financing of pilot projects that provide supporting quantitative and qualitative data that gives grounds to the implementation of a wider and more ambitious program. It is the team's and the government's believe that the pilot projects will help make a stronger case for the economic and environmental benefits of the adoption of RE, WE and EE.

7.4 There is a coordination risk since the project has several parties and beneficiaries and the communication channels could intertwine at some point. This risk is mitigated with the hiring of a PM who will centralize the communication among agencies, all the procurement processes and the influx of information, both from the consulting firms and the government agencies. The fiduciary risk, which resides on the capability of the MOTE to hire the consulting services under IDB's policies, is also mitigated with the presence of a PM. The PM will either have previous experience and familiarity with IDBs policies or will be trained for that matter. In any case, the MOTE and the PM will have permanent support from the project team, the country office and the procurement specialist in charge of the Bahamas.

VIII. ENVIRONMENTAL AND SOCIAL REVIEW

8.1 This TC will not have a direct environmental and social impact. The social impacts of this project will be positive taking into account it's objectives and scope. This TC will promote and support sustainable energy, including RE, EE, WE and energy conservations programs in order to ensure a sustainable development in the Bahamas, providing alternatives to minimize the dependency

on fossil fuels. Each of the financed components will comply with the environmental and safeguards compliance (OP-703) of the IDB.

8.2 Based on the IDB Environmental and Safeguard Compliance Policy (OP-703), and taking into account the objectives, impacts and risks of this TC, this operation is a Category “C”.

8.3 The ESR Secretariat reviewed the TC Profile on September 09, 2008 and the proposed environmental and social strategy was approved.

ANNEX I
LOGICAL FRAMEWORK
PROMOTING SUSTAINABLE ENERGY IN THE BAHAMAS
(BH-T1016)

Summary	**Performance Indicators**	**Means of Verification**	**Assumptions**
Goal Statement	Goal/Impact Indicators	Means of Verification	Assumptions
The objective of the TC is to promote and support sustainable energy, including RE, EE, WE and energy conservations programs in order to ensure a sustainable development in the Bahamas, providing alternatives to minimize the dependency on fossil fuels.	After the TC is completed (15 Months) the project will have achieved : 1) The country of Bahamas has an opportunity to diversify its energy sources and advance on the way of sustainable development; 2) GoBH has taken actual steps towards introducing RE, EE, and WE to the energy matrix; 3) GoBH has prepared the road technically and legally for the successful adoption of RE, EE and WE.	1) Sustainable Energy Framework finalized; 2) Assessments for RE, EE and WE finalized.	1) GoBH is committed to work towards the completion of the proposed studies; 2) GoBH is able to create consensus and raise awareness among government officials and society of the benefits of the adoption of RE, EE and WE; 3) GoBH maintains focus on RE, EE and WE regardless of favorable oil price fluctuations.
Components/Outputs	**Components/Outputs Indicators**	**Means of Verification**	**Assumptions**
Design and Implementation of a National Energy Efficiency Program.	1) Evaluation of the institutional capacity, policies and regulations to improve EE is carried out. 2) Assessment on the potential for a viable household and institutional solar water heater program finalized 3) EE audits in public buildings, residential sector and SMEs are analyzed	1) GoBH adopts the recommendations toward the implementation of the EE policies; 2) Measures are taken in place for the adoption of solar water heaters in households and institutions; 3) EE audits for public buildings, residential sector, and SM&Es are carried out; 4) EE pilot project completed; 5) Three preliminary reports; 6) Final report for this component presented and approved by the MOTE and the IDB.	GoBH highlights the importance of the adoption of EE practices, both at the government and consumer levels, for the efficient use of energy resources.

Assessment of the RE potential in The Bahamas.	1) Solar energy initiative assessed; 2) Wind monitoring initiative assessed; 3) Bioenergy research, development and demonstration program identified and designed; 4) Potential of OTEC as a renewable source of energy assessed.	1) RE potential for wind, solar, bioenergy, OTEC and other RE sources for electricity generation assessments are completed; 2) RE purchase/sell mechanisms for connection to the grid are presented; 3) Recommendations for RE alternative financial support options are presented; 4) RE pilot project design completed 5) Two preliminary reports; 6) Final report for this component presented and approved by the MOTE and the IDB.	GoBH highlights the importance of the introduction of RE to the energy matrix, both for economic and environmental reasons.
Development of WE projects.	1) Solid waste stream on Grand Bahama and New Providence islands assessed; 2) Best suited technologies for a WE plant assessed; 3) Harrold Road land fill assessed; 4) Current environmental policies and regulations analyzed.	1) Solid waste stream quantity and periodicity on Grand Bahama and New Providence islands is determined; 2) Identified technology for WE generates the maximum economic and environmental benefits; 3) Quantity, composition and flow of the gas at Harrold Road land fill assessed and determined if it could be feasibly converted into power; 4) Changes in policies and regulations that would be needed for the establishment of WE facilities identified; 5) Two preliminary reports; 6) Final report for this component presented and approved by the MOTE and the IDB.	GoBH highlights the importance of the introduction of WE to the energy matrix, both for economic and environmental reasons. Strict environmental and social considerations are followed for WE development.
Institutional Strengthening and Dissemination of Findings	1) GoBH institutions strengthened for the adoption of RE, EE and WE; 2)Interested sectors and the affected community participate in the project development and implementation; 3) Participation of all the interested institutions and sectors in the final presentation in Nassau.	1)Government officials are trained to face the challenges and opportunities in the sustainable energy development; 2) Interested sectors and affected community fully aware of the benefits and impacts of sustainable energy projects; 3) Two workshops with the GoBH interested institutions.	GoBH makes an objective effort to identify the country's needs, strengths and weaknesses on the energy sector, and works towards establishing an enforceable and realistic approach for the promotion of sustainable energy.

ANNEX II
DETAILED BUDGET
PROMOTING SUSTAINABLE ENERGY IN THE BAHAMAS
(BH-T1016)

Component	IDB-SECCI US$	MOTE in US$	TOTAL in US$
Component I - Design and Implementation of a National Energy Efficiency Program	**285,000**	**50,000**	**335,000**
Designing and EE program (audits to hotels, institutions and households)	175,000	25,000	200,000
Assessment of a solar water heater program	60,000	15,000	75,000
Policy and regulation review	50,000	10,000	65,000
Component II - Assessment of the RE potential in The Bahamas	**210,000**	**50,000**	**260,000**
a. Solar Energy Assessment Initiative	25,000	10,000	35,000
b. Design Wind Monitoring Program	75,000	10,000	85,000
c. Design and Implementation of a Bioenergy Research, Development and Demonstration Program	55,000	10,000	65,000
- Waste Oil	*40,000*	*10,000*	*50,000*
- Algae Production	*15,000*	--	*15,000*
d. OTEC	25,000	20,000	45,000
Component III - Development of WE Projects	**145,000**	**--**	**145,000**
Development of a WE facility at New Providence	60,000	--	60,000
Assessment of Harrold Road land fill	60,000	--	60,000
Feasibility Studies for producing waste derived fuels from solid waste in the Family Islands	25,000	--	25,000
Component IV– Institutional Strengthening and Dissemination of findings	**40,000**	**37,500**	**77,500**
Project Management and Supervision	**60,000**	**40,000**	**100,000**
Audits and Contingencies	**10,000**	**10,000**	**20,000**
TOTAL	**750,000**	**187,500**	**937,500**
Percentage	**80%**	**20%**	**100%**

ANNEX III

Project Procurement Plan

PROMOTING SUSTAINABLE ENERGY IN THE BAHAMAS (BH-T1016)

General information

Country: Bahamas
Beneficiary Country: The Commonwealth of The Bahamas
Executing agency: The Ministry of the Environment of the Bahamas (MOTE)
Project name: Promoting Sustainable Energy in the Bahamas
Brief description of the project's objectives and components:
The TC objectives are to: (i) provide technical assistance to the GoBH to achieve EE in public buildings, residential sector and commercial sectors, and implement demonstration projects; (ii) explore alternatives for RE and implement pilot projects; (iii) support the GoBH with a WE program; and (v) institutional strengthening and dissemination of findings.

Estimated date of project approval by INE/ENE Chief: December 2008.
Estimated date of signature of the Letter of Agreement contract: January 2009.
Estimated date of the final disbursement: April 2010.

A. Introduction

Procurements for the proposed project will be carried out in accordance with the *Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank* (GN-2350-7), of August 2006, and with the provisions established in the loan contract and this procurement plan.

B. Procurement plan

The procurement plan for this TC covering 12 months of project execution has been agreed between the IDB and GoBH. The plan, which is summarized in Appendix 1, indicates the procedure to be used for the procurement of services, and the method of selecting consultants, for each contract or group of contracts. It also indicates the estimated cost of each contract or group of contracts; and estimated dates for the publication of specific procurement notices and completion of the contracts included in this project. The procurement plan will be updated annually or whenever necessary or as required by the IDB.

The procurement plan is available on the Bank's website: Information on project procurements

C. Project procurement

The procurements to be made for the proposed project are described in general below.

Works procurement: There are no works included in the procurement plan.

Goods procurement: There are no goods included in the procurement plan.

Procurement of consulting services: Consulting services for the project include: research, analysis and reporting of results.

The consulting firm(s) to be hired for the project will be selected using the standard request for proposals (RFP) issued by the IDB. Individual consultants will be selected bearing in mind the provisions established in chapter V of the policy in document GN-2350-7.

Operating expenses: There are no foreseeable operating expenses to be financed by the IDB.

Appendix 1

Procurement plan[1]

Country: Bahamas
Beneficiary Country: The Commonwealth of The Bahamas
Executing agency: The Ministry of the Environment of the Bahamas (MOTE)
Project name: Strengthening the Energy Sector in the Bahamas
Brief description of the project's objectives and components:
The TC objectives are to: (i) provide technical assistance to the GoBH to achieve EE in public buildings, residential sector and commercial sectors, and implement demonstration projects; (ii) explore alternatives for RE and implement pilot projects; (iii) support the GoBH with a WE program; and (v) institutional strengthening and dissemination of findings.

Estimated date of project approval by INE/ENE Chief: December 2008.
Estimated date of signature of the Letter of Agreement contract: January 2009.
Estimated date of the final disbursement: April 2010.

Contract Description	Estimated Cost (US$)	Selection Method	Review (ex-ante or ex-post)	Source of Financing and percentage	Publication of Procurement Notices	Status (pending, in process, awarded, cancelled
Component I - Design and Implementation of a National Energy Efficiency Program	285,000	QCBS	ex-ante	IDB=85%	January 2009	Pending
Component II - Assessment of the RE potential in The Bahamas	210,000	QCBS	ex-ante	IDB=81%	January 2009	Pending
Component III – Development of WE project	145,000	QCBS	ex-ante	IDB=100%	January 2009	Pending
Component IV – Institutional Strengthening Dissemination of findings	40,000	QCBS		IDB=52%	January 2009	Pending
Project Manager	60,000	IC	ex-post	IDB=60%		Pending

QCBS=Quality and Cost Based Selection, IC=Individual Consultant

[1] All project contracts should be included, even if not financed by the IDB, indicating the source of funding in each case.