

## **ECPA ACTION PLAN 2018-2019**

### **General aspects**

The Action Plan is a tool that facilitates participatory monitoring of actions related to clean, efficient, and affordable energy in the region. It aims to organize hemispheric energy cooperation within a given timeframe by establishing activities for each of the pillars and crosscutting planks of the ECPA, taking note of countries participating in collaborative activities or national energy priorities and establishing implementation periods and expected results.

### **Period covered**

The ECPA Action Plan covers a two-year period –although some actions may have a longer duration- and updates for the subsequent period are approved at ministerial meetings.

### **Contents**

The Action Plan is built around the pillars and crosscutting planks of ECPA, which also tie in with international objectives, such as the Sustainable Development Goals (SDGs) and the Sustainable Energy for All Initiative (SE4ALL), both of which are sponsored by the United Nations:

- Pillar 1: Energy Efficiency
- Pillar 2: Renewable Energy
- Pillar 3: Efficient Use of Fossil Fuels
- Pillar 4: Energy Infrastructure
- Pillar 5: Energy Poverty
- Pillar 6: Regional Energy Integration
- Pillar 7: Energy Research and Innovation

The biennial Action Plan contains concrete initiatives to advance in a collaborative manner –with other countries of the hemisphere- or on the national level, according to the priorities expressed by the countries of the Americas in the context of the regional energy transition.

# ECPA 2018-2019 ACTION PLAN MATRIX

## “TOWARD ENERGY TRANSITION IN THE AMERICAS”

### I. COLLABORATIVE ACTIONS

PILLAR 1: ENERGY EFFICIENCY							
Country Leading the Initiative	Specific Topic	Objective	Participating Countries/Potential Partners	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Brazil	Implementation of ISO 50.001 in industries	To implement ISO 50.001 as an effective instrument recognized worldwide for continuous improvement	USA, Mexico, Colombia or other interested countries.	<ul style="list-style-type: none"> <li>-Promotion of ISO 50.001 to consumers through workshops.</li> <li>-Certification of auditors of Management System.</li> <li>-Promotion of accreditation mechanisms for institutions that carry out conformity assessment.</li> <li>-Training of professionals in 40 small and medium industries and 9 major industries.</li> <li>-Demonstrative case of implementation of ISO 50,001 in three industries, two medium and large.</li> <li>-Dissemination of results.</li> </ul>	2 years	International organizations, for instance, UNIDO, ECPA, UNEP, Coordination: Mines and Energy Ministry	.Energy savings, increase of number of certified organizations on ISO 50.001 or of ISO 50.001 implementations, building capacity and dissemination of benefits of ISO 50.001 implementation.
Colombia	Education in energy efficiency	To support the inclusion of energy efficiency and renewable energy issues in formal education at the preprimary, elementary, and middle school levels)	United States and Mexico or multilateral banks.	Preparation, editing, printing, and distribution of 5,000 copies of the Methodological Guide drawn up on the subject for teachers at the preprimary, elementary, and middle school levels and the holding of 5 events (workshops) in 5 cities (one per city) to promote it.	First half 2018	Technical coordination by the Mining/Energy Planning Unit (UPME). The idea is to obtain multilateral bank (IDB, World Bank, etc.) or cooperation agency (USAID, AMEXCID, or similar) financing for the preparation, editing, printing, and distribution of the proposed material.	Easier “ownership” of the methodology by teachers with a view to promoting its regular use in day-to-day activities and guaranteeing that the new generations being shaped today acquire a well-structured knowledge of energy efficiency and renewable energy issues.

Costa Rica	Electrification of public and private transport.	To encourage and reinforce the use of electric transportation in order to reduce the use of fossil fuels, environmental pollution, and adverse impacts on health.	Partnerships between countries interested in joint pilot projects and access to cooperation.	<ul style="list-style-type: none"> <li>-Establishment of a regional network for cooperation and exchange of experience acquired with the electrification of transportation.</li> <li>-Technical studies for developing charging infrastructure, communication platforms, and electric transportation business models.</li> <li>-Implementation of pilot projects for compiling experiences with the use of new technologies in public and private transport.</li> <li>-Maintenance of an electricity grid with a high percentage of renewable sources to ensure the availability of clean energy for the electrification of transportation.</li> <li>-Ensuring the reliability of the electricity system with a high percentage of variable renewable energies by developing smart networks and storage systems.</li> </ul>	5 years	<ul style="list-style-type: none"> <li>-Access to international cooperation and technology transfer resources.</li> <li>-Technical assistance for capacity building and the carrying out of technical studies relating to electric transportation, variable energy sources, smart networks, and power storage.</li> </ul>	<ul style="list-style-type: none"> <li>-Cooperation network and exchanges of experiences among countries interested in the electrification of transportation.</li> <li>-Achievement of technology transfer of the electric car and bus industry.</li> <li>- Technical studies for developing infrastructure, communication platforms, and electric transportation business models.</li> <li>- Pilot projects for compiling experiences with the use of new regional technologies.</li> <li>-Electricity grid with a high percentage of renewable sources to ensure the availability of clean energy for the electrification of transportation.</li> <li>-Electricity system with a high percentage of variable renewable energies by developing smart networks and storage systems.</li> </ul>
Chile	Energy efficiency in the use of firewood for heating homes.	To exchange experiences with the efficient use of firewood for heating homes in Chile and Uruguay, in order to strengthen public policies in this area in the two countries.	Chile, Uruguay	<ol style="list-style-type: none"> <li>1. Carrying out a diagnostic assessment of public policies pursued in Chile and Uruguay with respect to efficient use of firewood for heating purposes.</li> <li>2. Presenting cases of successful application of public policies regarding the efficient use of firewood for heating.</li> <li>3. Forming of working groups for knowledge transfer and strengthening public policies on the use of firewood in the two countries.</li> <li>4. Generating a cooperation report for the two countries aimed at boosting public policies in the area of the efficient use of firewood for heating purposes.</li> </ol>	2018-2019	AUCI, AGCI (the Uruguayan and Chilean International Cooperation Agencies), Ministry of Energy of Chile, Ministry of Industry, Energy, and Mining of Uruguay	Based on the learning process, the establishment or improvement of public policies for more efficient and less polluting use of firewood and its by-products.
Chile	Electric mobility	To develop education and knowledge of electric mobility; costs and benefits.	Chile, Mexico, and Peru (financed), and interested EPCA countries.	Promotion of electric mobility focusing on infrastructure and training of the workforce through workshops and other activities.	2018-2019	APEC, Ministry of Energy of Chile	Training of the workforce of the countries involved, in order to foster the diversification of the fuel energy matrix with a higher percentage of electric mobility.

Mexico	Efficiency Program in the Federal Public Administration (APF).	To share Mexico's and Chile's experience with promoting efficient use of energy in the public sector and to strengthen capacities in participating countries for designing and implementing energy efficiency programs in public sector buildings and vehicle fleets.	Belize, Costa Rica, Guatemala, El Salvador, Honduras, Nicaragua, Panama, Dominican Republic, Guyana, Chile, Argentina <sup>1</sup>	With the support of the National Commission for the Efficient Use of Energy (CONUEE) and the Energy Efficiency Division of the Ministry of Energy of Chile, three separate activities may be carried out: 1. Introductory seminars: To address background, content, and general administrative provisions that form part of the APF Efficiency Program. Besides, the Chilean experience about the program "Gestiona Energía" will be shared. 2. Training in implementing an Energy Efficiency in Government Facilities Program. <sup>2</sup> - Internal governance for operating the program. - Familiarity with alternative technologies for replacing lighting and other devices. - Familiarity with energy management systems and traineeship networks. 3. Implementation of pilot programs: assistance and follow-up to identify financing opportunities with international organizations.	10 months	Technical Coordination Unit (TCU) of EPCA for conducting Webinars Potential partners: IDB/ECLAC/OLADE/PM (sic;WB?)	X number of programs implemented/under way in public sector entities in ECPA in 2019.
Peru	Implementation of energy efficiency measures.	To achieve a sustainable reduction in national demand for energy.	Countries participating in ECPA	-Design of financial mechanisms to support investment in energy efficiency measures. -Dissemination and promotion of energy efficiency labeling. -Preparation of Minimum Energy Efficiency Standards-MEES. -Transformation of the lighting market towards more energy-efficient technologies.	2018-2019	Technical and financial resources; synergies and partnerships with ECPA countries.	Reduction of the demand for energy through energy-efficient technologies.

<sup>1</sup> Initial proposal pending confirmation with the technical counterparts of CONUEE and open to the participation of all ECPA member countries.

<sup>2</sup>The Energy Efficiency Program for public facilities in Mexico considers buildings, vehicle fleets and industrial facilities.

				<ul style="list-style-type: none"> <li>-Mandatory audits in the public sector.</li> <li>-Encourage the constitution of certified suppliers for energy audits.</li> <li>-Promotion of energy management systems.</li> <li>-Promotion of sustainable construction standards related to energy efficiency.</li> </ul>			
Peru	Inclusion of electric vehicles.	To reduce energy consumption in the transportation sector.	Brazil, United States	<ul style="list-style-type: none"> <li>- Development of an energy NAMA to promote clean transportation and innovative and sustainable technologies.</li> <li>- Carrying out of pilot schemes in certain parts of the country to verify its technical and financial viability.</li> <li>- Promotion of electric vehicles.</li> </ul>	2018-2019	UNDP; synergies and partnerships with ECPA countries.	Increased use of electrical vehicles.
Uruguay	Description of the vehicle fleet and the use made of it.	To develop a methodology for surveying the vehicle fleet and its use.	Partnership with countries in the region facing the same issues.	<ul style="list-style-type: none"> <li>a) Preparation of a survey methodology to be applied throughout the region to gauge the size and nature of the vehicle fleet.</li> <li>b) Design of surveys for each transportation segment in order to determine: the vehicle fleet, routes, age, average consumption and other characteristics associated with its use in the transportation sector.</li> <li>c) Preparation of a manual to be updated from time to time.</li> <li>d) Establishment of specific indicators for monitoring and evaluating policies pursued in the transportation sector.</li> <li>e) Capacity-building within institutions for conducting studies, either directly or in a counterpart capacity.</li> </ul>	3 years	<ul style="list-style-type: none"> <li>-Cooperation between countries with experience in this field and advances with regard to methodology.</li> <li>-Ministry of Industry, Energy, and Mining with assistance from the "interagency group on energy efficiency in transportation."</li> </ul>	<ul style="list-style-type: none"> <li>- Standardized methodology for surveys of the vehicle fleet and ways it is used.</li> <li>- Manual on periodic updating of the methodology.</li> <li>- Specific indicators for the transportation sector.</li> <li>- Personnel trained in this field.</li> </ul>

Uruguay	Development of electric transportation.	To explore the potential for expanding electric transportation in Uruguay.		<p>a) Adjusting vehicle fleet projection methodology and determining the potential for electronic transportation, taking into account technical and economic aspects of the technologies involved and the socioeconomic characteristics of the country.</p> <p>b) Studying the spillover effects of introducing electric transportation.</p> <p>c) Developing a regional methodology for the leasing or purchase of electric vehicles.</p> <p>d) Developing standardized charging systems in the region to facilitate electric traffic between countries.</p>	4 years	<ul style="list-style-type: none"> <li>-Need for an expert of countries with electric transportation expansion policies.</li> <li>-Cooperation with countries to develop regulations in cooperation with the technical standardization agency, via regional workshops and meetings.</li> <li>-Cooperation among countries to develop specifications through technical exchanges and workshops.</li> <li>-Experts in studies of spillover effects (externalities).</li> </ul>	<ul style="list-style-type: none"> <li>-Potential for the expansion of electric transportation in Uruguay.</li> <li>-Spillover effects from introducing electric transportation.</li> <li>-Specifications/conditions for the purchase of electric vehicles.</li> <li>-Regional standardization of the charging system.</li> </ul>
---------	---	--	--	---	---------	--	---

**PILLAR 2: RENEWABLE ENERGY**

Country Leading the Initiative	Specific Topic	Objective	Participating Countries/Potential Partners	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Antigua and Barbuda	Waste to Energy applications.	To reduce pressure on existing waste disposal facilities, reducing pollution and reducing fossil fuel use and imports through harnessing of renewable energy sources.	Antigua and Barbuda and potentially other eastern Caribbean countries.	Feasibility assessments of appropriately scaled waste to energy facilities and financing of the venture.	24 months	International technical and financial assistance agencies; national waste management, health, and energy authorities; private sector waste entrepreneurs.	Harnessing of available base load energy from nationally generated wastes leading to reduced pressures on waste disposal facilities, and reduced coastal and land-based pollution, as well as generation of electricity from renewable sources.
Argentina	Access to modern and affordable energy services in Latin America and the Caribbean.	<ul style="list-style-type: none"> <li>-To gather the latest findings and experiences from organizations like OLADE and the IDB around the subject matter.</li> <li>-Focus on the issue of affordability of energy services in emerging economies.</li> <li>-Complement the G20 Access to Energy Action Plans for Sub-Saharan Africa and East Asia.</li> </ul>	G20 member countries	This activity will be jointly developed by OLADE and the IDB under the leadership and supervision of the G20 Argentine Presidency. During the first half of 2018, progress will be reported at the G20 Energy Sustainability Group meetings, where the rest of the G20 members will make their contributions and recommendations.	October 2017-September 2018	Coordinated by Argentina in collaboration with OLADE and IDB	G20 Access to Energy Action Plan for Latin America and the Caribbean.
Chile	Unconventional renewable energies.	To share knowledge and experience with regard to regulating and managing renewable energies.	Chile, Argentina	Binational seminar to exchange lessons learned and best practices with respect to: <ul style="list-style-type: none"> <li>- Changes to regulations that have impacted the development of Unconventional Renewable Energies</li> <li>-Regulation of Small Energy Distributed Generation, Net-billing, and self-consumption without grid-injection. Role and rights of the actors involved, remuneration system.</li> </ul>	2017-2018	GIZ, Ministry of Energy of Chile, Ministry of Energy and Mining of Argentina	Shared learning experiences between both countries on regulatory amendments, regulation, strategy, and changes in the handling of unconventional renewable energies, with a view to establishing and improving public policies in these areas.

				<ul style="list-style-type: none"> <li>- Development and trends.</li> <li>- Strategy implemented to develop distributed generation for self-consumption (Net-billing, DG without injection): Regulation – Monitoring- Supply-side stimulation – Demand activation</li> <li>-Public solar roofs program.</li> </ul>			
Peru	Increasing the share of renewable energy sources in the energy matrix.	To diversify the energy matrix in order to ensure reliable, regular, ongoing, and efficient satisfaction of the national demand for energy; promote sustainable development; and support energy planning.	Countries participating in ECPA	<ul style="list-style-type: none"> <li>- Promoting investment in electric power generation using renewable energy.</li> <li>- Evaluating the energy matrix after introducing unconventional renewable energy resources (RER).</li> <li>- Promoting distributed generation to encourage self-generated electricity using renewable sources and cogeneration.</li> <li>- Promoting smart networks.</li> <li>- Drawing up of the National Energy Plan to evaluate diversification of the matrix and the increase in generation using RER.</li> </ul>	2018-2019	Technical and financial resources, synergies, and partnerships with ECPA countries.	Greater diversification of renewable energy sources.

**PILLAR 3: EFFICIENT USE OF FOSSIL FUELS**

Country Leading the Initiative	Specific Topic	Objective	Participating Countries/Potential Partners	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Canada	Cleaner Oil and Gas Working Group.	<p>Rename the existing Heavy Oil Working Group to the “Cleaner Oil and Gas Working Group” and expand its scope beyond heavy oil to include all oil and gas production.</p> <p>The working group will promote best practices for managing the development of all oil and gas resources through clean technology and innovation with a focus on reducing emissions associated with their development.</p> <p>Efforts to increase the sustainability of the oil and gas sector will encourage investment and support the creation of a more resilient industry.</p>	Canada, with potential participation from countries that partook of the Heavy Oil Working Group: Brazil, Colombia, Ecuador, Mexico, Trinidad and Tobago, and the U.S. (subject to confirmation).	<p>Activities would build upon the foundation established through previous meetings of the Heavy Oil Working Group. It is proposed that the Working Group focus on information exchange and knowledge-sharing related to:</p> <ul style="list-style-type: none"> <li>•clean technology innovation to mitigate emissions;</li> <li>•policy and regulatory best practices; and</li> <li>•the role of the public and private sectors to support clean technology development and uptake.</li> </ul> <p>The first meeting of the newly expanded working group would focus on sharing information and knowledge gained from methane and black carbon mitigation projects in Canada and Mexico. Natural Resources Canada is currently collaborating with Mexico on a project to identify high-impact emission reduction opportunities in the oil and gas sector and develop jurisdictional emissions reduction strategies that are both cost-effective and of sufficient impact to quantifiably and verifiably reduce emissions.</p>	2018 and 2019	Participation in the Working Group will be open to all ECPA members, including industry. The participation of oil and gas industry and international organizations will be encouraged.	<p>Clean technologies and practices to mitigate emissions and increase energy efficiency in the oil and gas sector are highly transferable across jurisdictions and will help enhance the environmental, economic and social sustainability of this sector. Collaboration under the proposed new working group will seek to:</p> <ul style="list-style-type: none"> <li>•improve emissions monitoring and reporting;</li> <li>•identify opportunities to cost-effectively improve resource recovery and environmental performance;</li> <li>•inform regulatory/policy development and research/clean technology development priorities;and</li> <li>•enable access to capital for implementation of emission reduction projects.</li> </ul>
United States	Remote or In-Person Workshop on Methane emissions reduction.	Sharing best practices in support of the ECPA pillar of cleaner and more efficient use of fossil fuels.	Hemispheric.	(Proposed) Remote/DVC or In-Person Technical Workshop on methane emissions reduction.	2018.2019	USDOE, Office of Fossil Energy; Open to partnerships.	Facilitate sharing of best practices on methane emissions reduction.

## PILLAR 4: ENERGY INFRASTRUCTURE

Country Leading the Initiative	Specific Topic	Objective	Participating Countries/Potential Partners	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Ecuador	Promoting energy security in the electricity system.	To diversify the energy matrix with renewable energies, strengthening the generation system. - To strengthen protection of electricity infrastructure from external threats (climate change, cyber-attacks, technological shifts, natural disasters)	Open to countries in the region with experience and interest in this field	- Establishing the complementarity and stability criteria to be considered when planning an expansion of energy generation. - Analyzing external threats and establishing methodologies for incorporating them in planning. - Analyzing policies and incentive mechanisms to promote generation using unconventional renewable sources (geothermal, solar, wind, biomass). - Exchanging of information regarding successful experiences and lessons learned in the region.	2018-2020	Ministry of Electricity and Renewable Energy	- Planning processes strengthened and capacities built. -Policies and incentive mechanisms implemented
Ecuador	Promoting private participation in the electricity sector.	-To promote public-private partnerships in the electricity generation segment. -To develop competitive bidding processes for constructing and operating generation projects	Open to countries in the region with experience and interest in this field.	-Exchanging experiences among countries. -Designing and implementing transparent, competitive, and efficient public selection processes.	2018-2023	Ministry of Electricity and Renewable Energy	By 2023: several generation projects carried out on a public-private partnership basis.

**PILLAR 5: ENERGY POVERTY**

Country Leading the Initiative	Specific Topic	Objective	Participating Countries/Potential Partners	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Chile	Strengthening of energy capacities	To provide technical cooperation to boost energy capacities in Haiti	Chile, Haiti, and other ECPA countries interested in providing technical assistance and counseling for Haiti.	Establishing a Technical Cooperation program for providing assistance in the areas of energy efficiency, access to energy, and institutional support	2018-2019	AGCI, Ministry of Energy of Chile	Provision of technical know-how on energy matters to the Republic of Haiti with a view to forging effective public energy-related policies.
Uruguay	Right to energy	To exchange best practices and lessons learned in implementing regularization, access, and energy sustainability policies in the urban residential sector.	ECPA countries.	<ul style="list-style-type: none"> <li>-Network for cooperation and the sharing of experiences in this field among countries of the region.</li> <li>-Workshops in which technical personnel share their experiences with implementing:               <ol style="list-style-type: none"> <li>1) Energy regularization and access policies.</li> <li>2) Key components and tools for ensuring sustainability in access to energy.</li> <li>3) Approach and socio-educational experiences with communities regarding energy efficiency.</li> <li>4) Impact monitoring and assessment methodologies.</li> </ol> </li> </ul>	2018-2019	Technical cooperation among countries. Experts on energy policies for the residential sector.	<ul style="list-style-type: none"> <li>-Network of countries implementing initiatives aimed at guaranteeing secure access to (modern) energy for the entire population.</li> <li>-Manual of best practices to be replicated and lessons learned.</li> <li>-Monitoring indicators.</li> </ul>

Uruguay	Right to energy	To exchange best practices and lessons learned in implementing regularization, access, and energy sustainability policies in the urban residential sector.	ECPA countries.	<p>-Network for cooperation and the sharing of experiences in this field among countries of the region.</p> <p>-Workshops in which technical personnel share their experiences with implementing:</p> <ol style="list-style-type: none"> <li>1) Rural electrification policies.</li> <li>2) Rural electrification experiences with isolated systems: design of installations, complementarity of sources, technology transfer and user "ownership" of the technology, criteria for setting tariffs, the right equipment for users, and so on.</li> <li>3) Socio-educational training for users and the community to familiarize them with the systems and with energy efficiency, to ensure that isolated solutions are sustainable.</li> <li>4) Impact monitoring and assessment methodologies.</li> </ol>	2018-2019		<p>-Network of countries implementing initiatives aimed at universalizing secure access to (modern) energy for the whole of the population.</p> <p>-Manual of best practices to be replicated and lessons learned.</p> <p>-Monitoring and evaluation indicators.</p>
---------	-----------------	--	-----------------	---	-----------	--	--

## PILLAR 6: REGIONAL ENERGY INTEGRATION

Country Leading the Initiative	Specific Topic	Objective	Participating Countries/Potential Partners	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Chile	Electricity interconnection.	To move ahead with bilateral and multilateral electricity interconnection projects with countries in the region.	Chile, Peru, Argentina, and interested ECPA countries.	<ul style="list-style-type: none"> <li>- Studies of electricity connection options between Chile and Peru, and between Chile and Argentina.</li> <li>- Workshops to disseminate the conclusions of electricity interconnection reports.</li> </ul>	2018-2020	IDB, CAF, Ministry of Energy of Chile, Ministry of Energy and Mines of Peru, Ministry of Energy and Mining of Argentina	Studies completed assessing the economic benefits of electricity interconnection among participating countries and distributed among other ECPA countries interested in the subject.
Ecuador	Strengthening of international electricity interconnections.	To foster and consolidate electricity exchanges in the region.	Open to all countries in the region	<ul style="list-style-type: none"> <li>- Developing mechanisms for coordinated planning between and among countries.</li> <li>- Developing regulatory frameworks for promoting integration of electricity markets.</li> <li>- Establishing funding mechanisms for implementing interconnection projects.</li> </ul>	2018-2023	Ministry of Electricity and Renewable Energy	By the end of the implementation period, the regional will enjoy a stronger, secure, and stable electricity system, supported by energy policies conducive to the sustainability of the sector.
Central America and Mexico	Electricity interconnection and market integration.	Advance bilateral and regional electricity interconnections and trade.	Central America, Colombia, Mexico with support from the U.S.	Central America power: System operator budget methodology; renewable energy integration; contracts and financial transmission rights, regional grid reliability.	2012-2022	CDMER, EOR, CRIE, IDB and U.S. government.	Studies assess the feasibility, economic benefits and potential expansion of electricity interconnection among participating countries. Technical Assistance to strengthen the regional electricity market (MER)
United States	Advancing Metrology for Sustainable Energy Technologies and the Environment in the Western Hemisphere - Second Phase.	To support the deployment of sustainable energy technologies and foster low carbon economic growth in the Americas.	Hemispheric	<p>Metrology for sustainable energy technologies and the environment.</p> <p>To strengthen metrology capabilities of technical stakeholders in the fields of energy efficiency, renewable energy, air quality and greenhouse gases in beneficiary countries through short and long technical exchanges, trainings and webinars.</p>	2016-2020	National Institute of Standards and Technology (NIST).	<ul style="list-style-type: none"> <li>- Improved metrology's infrastructure to support GHG emission measurements, air quality, energy efficiency, and renewable energy.</li> <li>- Increased technical skills on metrology applications for sustainable energy technologies and air quality.</li> <li>- Reinvigoration of the role of Metrology to support the adoption of international standards and measurements needed to advance the adoption of sustainable</li> </ul>

							<p>energy technologies and improve air quality.</p> <ul style="list-style-type: none"> <li>-Knowledge exchange and best practices among hemispheric technical agencies</li> <li>Increased communication to bridge gap between sustainable energy, air quality and policy making.</li> <li>-Knowledge exchange to prepare government officials and metrology communities to respond to the technical needs that are arising as part of the implementation of the commitments to reduce GHG.</li> </ul>
United States	Advancing Metrology for Energy Efficient Measurements and Compliance in Central America and Dominican Republic.	To strengthen capabilities of government officials and technical stakeholders to perform energy efficiency measurement and compliance assessments in equipment and appliances, as means to contribute to a sustainable energy policy development in the context of the Central America Integration System (SICA).	SICA member states.	<p>Metrology for the promotion of energy efficiency in SICA member states.</p> <p>To support the implementation of the Central America Technical Regulation on Energy Efficiency (RTCA) for household appliances and equipment through technical training, awareness, knowledge sharing, best practices, technical exchanges and regional cooperation.</p>	2017-2020	National Institute of Standards and Technology (NIST).	<ul style="list-style-type: none"> <li>-Improved metrology's infrastructure for energy efficiency.</li> <li>-Institutional strengthening on technical capabilities needed for regulation development, accreditation and certification of energy efficiency.</li> <li>-Increased communication between regulators and technical agencies involved on energy and policy-making.</li> <li>-Increased knowledge on testing, conformity assessment, energy performance standards, labeling and enforcement protocols for energy-efficiency.</li> <li>-Regional integration and cooperation to tackle energy and standards harmonization issues.</li> <li>-Engage government officials and metrology communities to respond to the technical needs arising as part of the implementation of the commitments to reduce GHG emissions and improve air quality.</li> </ul>

**PILLAR 7: ENERGY RESEARCH AND INNOVATION**

Country Leading the Initiative	Specific Topic	Objective	Participating Countries/Potential Partners	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Uruguay	Electrical storage batteries.	To analyze the possibility of developing regional production of batteries.		<p>a) Feasibility study for regional production of storage batteries for use in transportation and/or storage systems.</p> <p>b) Alternative uses of batteries that have reached the charge cycles recommended for electrical vehicles.</p> <p>c) Development of regulations governing the use and disposal of batteries.</p> <p>d) Studying of Quickdrop recharging systems using battery switch.</p>	2 years	<p>Technical assistance from academic institutions specializing in the subject.</p> <p>Cooperation among countries to develop regulations, jointly with standardization agencies.</p>	<ul style="list-style-type: none"> <li>- Feasibility of developing regional production of batteries.</li> <li>- Options for second uses of batteries</li> <li>- Regulations governing the use and final disposal of batteries.</li> <li>- Feasibility of rapid battery switches.</li> </ul>

## CROSS-CUTTING PLANKS

Country Leading the Initiative	Specific Topic	Objective	Participating Countries/Potential Partners	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Chile	<b>Sustainable development:</b> Energy communes.	To develop a sustainable local energy development model to promote and replicate the Chilean Ministry of Energy's Energy Commune program.	Chile, Uruguay	<ol style="list-style-type: none"> <li>1. Conducting a diagnostic assessment of the institutional and regulatory framework of the current status of local energy development in the two countries.</li> <li>2. Transferring methodologies, experiences, best practices to local (public-private and civil society) actors, to foster a sustainable local energy development model.</li> <li>3. Identifying critical factors for a sustainable local energy development model in the two countries.</li> <li>4. Generating bilateral cooperation ties. Exchanges, workshops, compilation of best practices, lessons learned, and shared challenges in developing sustainable local energy.</li> </ol>	2018-2019	AGCI. AUCI, Ministry of Energy of Chile, Ministry of Industry, Energy, and Mining of Uruguay	Chile and Uruguay share learning experiences with respect to regulations, energy-related institutional organization, and critical success factors for formulating or improving public policies relating to the development of sustainable local energy that can be replicated to interested ECPA countries.
United States	<b>Governance:</b> Shared leadership and cooperation in clean energy at the regional level (ECPA Technical Coordination Unit).	To promote political dialogue, foster the exchange of best practices, contribute to capacity-building, and facilitate regional coordination and diplomacy on matters relating to energy.	Hemispheric	A mechanism conceived for fostering partnerships for greater dialogue, collaboration and awareness on energy and climate. In charge of the ECPA's communications and outreach efforts and organizer of high-level and technical events.	2017-2020	World Bank IDB Governments, Multilateral energy organizations Universities Civil society organizations.	A region with a more accommodating policy and technical environment for adapting and incorporating cleaner and sustainable energy technologies and practices.

<p>United States</p>	<p><b>Sustainable Energy:</b> Donor and resource coordination for sustainable energy and energy security in the Caribbean.</p>	<p>To contribute to the efforts of Caribbean States to meet the demands for modern, secure, reliable, efficient, cost-effective energy services and energy security.</p>	<p>Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) Platform. (CARICOM member states)</p>	<p>To increase the efficiency and efficacy of donor, investor, and developer endeavors in order to advance adequate and appropriate energy governance and regulatory structures, leading to increased investments, private sector engagement, and infrastructure modernization.</p>	<p>2017-2019</p>	<p>CARICOM Secretariat World Bank IDB CDB GIZ</p>	<ul style="list-style-type: none"> <li>-Sustainable energy targets and policy and regulation aspects identified at the national level through the Policy and Regulation Thematic Working Group (TWG).</li> <li>-Caribbean Renewable Energy and Energy Efficiency Matrix established as technical assistance coordination mechanism</li> <li>-Caribbean clean energy knowledge portal created.</li> <li>-Provide recommendations on key areas of policy, technology and technical assistance provided to CARICOM member states via the Technical Advisory Group.</li> <li>-Provide advice on ways to strengthen the governance of the C-SERMS platform.</li> <li>-Convene the biannual Caribbean Sustainable Energy Forum (CSEF)-</li> </ul>
----------------------	--	--	--	---	------------------	---	---

## II. NATIONAL ACTIONS

PILLAR 1: ENERGY EFFICIENCY						
Executor country	Specific Topic	Objective	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Antigua and Barbuda	Sustainable transportation options including adoption of electric vehicles.	To reduce growth in fossil fuel use in the transportation sector by enabling a shift to energy efficient transportation modes including electric vehicles being charged from renewable energy sources.	Replacement of public sector vehicles and support for electric vehicles in the private sector through direct financing support for select public vehicles and availability of concessionary financing for electric vehicles in the private sector.	36 months	Multilateral financing agencies, national government authorities, and private sector energy entrepreneurs.	.Greater public awareness of benefits to be obtained from sustainable transportation options, adoption of sustainable transportation modes in private and public sectors, and reduction in transportation fossil fuel demand.
Antigua and Barbuda	Energy efficiency in the Tourism Sector.	To improve the economic performance of the tourism sector through adoption of energy efficiency technologies and methodologies.	Implementation of a continuous capacity building program to facilitate best energy practices within the tourism sector.	24 months	Multilateral financing agencies, national government authorities, and various tourism sector entrepreneurs including hotels, restaurants, and transportation and tour providers.	.Greater energy efficiency in the tourism sector resulting in improved macro-economic competitiveness and enhanced returns for tourism sector investors. An overall reduction in greenhouse gas emissions and reduced importation of fossil fuels.
Ecuador	Standardization and labeling of electrical devices.	To update and develop standards and technical specifications needed to classify the various products and devices that consume electricity according to their level of efficiency.	<ul style="list-style-type: none"> <li>-Review and updating of existing standards.</li> <li>-Strengthening of quality requirements in national testing laboratories.</li> <li>-Strengthening of quality assessment agencies.</li> <li>-Coordinating with the government</li> </ul>	Electrical devices: 2017-2019	Ministry of Electricity and Renewable Energy (MEER), Ministry of Industries and Productivity (MIPRO), Foreign Trade Committee (COMEX), Ecuadorian	By 2019: Energy labeling and badge indicating maximum energy efficiency implemented for electrical devices consuming most energy.

			<p>departments concerned the inclusion of energy labeling in government procurement.</p> <ul style="list-style-type: none"> <li>-Agreements with manufacturers, assemblers, and importers.</li> <li>- Dissemination campaigns.</li> </ul>		Standardization Service (INEN), Ecuadorian Accreditation Service (SAE).	
Ecuador	Strengthening of the institutional and regulatory framework for promoting energy efficiency.	<ul style="list-style-type: none"> <li>- To consolidate the legal framework for promoting and developing energy efficiency in the country, providing the certainty needed by potential investors.</li> <li>-To strengthen the Interagency Committee on Energy Efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>-Strengthening and reforming the institutional structure around the various energy efficiency actions identified in the PLANEE.</li> <li>- Analyzing legal, regulatory, administrative, and organizational hurdles.</li> <li>- Establishing the legal and regulatory framework for promoting energy efficiency.</li> </ul>	2017-2018	MEER	<ul style="list-style-type: none"> <li>-Institutional arrangements strengthened in such a way as to guarantee coordination, articulation, and comprehensive formulation of energy efficiency policies and actions.</li> <li>- By 2018: An energy efficiency law enacted with the regulatory framework for its implementation.</li> </ul>
Ecuador	Replacement of devices consuming the most energy.	To replace obsolete technologies that generate high levels of energy consumption with new, more efficient devices.	<ul style="list-style-type: none"> <li>- Continuation of the voluntary renewal of refrigerators, stoves and lighting devices programs.</li> <li>-Further efforts to replace gas stoves with more efficient induction cookers.</li> <li>- Expansion of the scope of the device renewal programs.</li> <li>- Survey of information relating to inefficient devices in participating industries.</li> <li>-Evaluation of the criteria for selecting devices/participating industries.</li> <li>-Establishment of incentives for promoting private sector involvement.</li> </ul>	Stage 1: 2017-2020	MEER, MIPRO; Electricity distribution enterprises; manufacturers, assemblers, importers, and distributors of household appliances; manufacturers' associations, and professional societies.	By 2020: Implement the replacement program.
Ecuador	Implementation of power management systems in buildings and industries.	To implement power management systems in energy-intensive industries and government institutions, by promoting adoption of ISO 50001.	<ul style="list-style-type: none"> <li>-Identification of those involved with implementation of ISO 50001.</li> <li>- Training and technical assistance program needed to implement power management systems (SGEn) and certification in the area of energy efficiency and best practices.</li> <li>-Coordination of training courses in SGEn and optimization of systems used in specialized institutions.</li> </ul>	Stage 1: 2017-2020	MEER MIPRO; CGREG; professional societies; manufacturers' associations	

			- Follow-up, monitoring and generation of SGEEn reports to the indicators system for management of energy efficiency programs.			
Honduras	Development of own electricity generating projects in order to lower prime time consumption expenses.	To establish energy policy conditions by fostering public-private investments aimed at achieving efficient provision of energy to meet constantly growing demand.	Promoting the economic and sustainability benefits of self-supply energy policies.	2018-2032	Honduras	-Stable supply of energy to electricity grids. -Installation of alternative self-generation systems. -Medium- and long-term financial benefits.
Dominican Republic	Energy efficiency and technology.	Professional capacity-building.	Local capacity-building, knowledge transfer by international experts, implementation of show-case projects and promotional activities on energy efficiency issues to meet technical needs derived from the implementation of such measures as: - Investment to promote energy efficiency. - Reducing greenhouse gas emissions (GGE). - Increasing the rational use of energy. - Increasing renewable energy efficiency. - Air quality testing. -On-site inspections, measurements. and oversight of government institutions.	2018-2019	Technical assistance – international cooperation	-Trained personnel- Training courses replicated across the region. -Technical assistance for pilot projects.
Dominican Republic	Energy efficiency standardization policies	To establish performance indicators for evaluating energy efficiency policies.	Assessment of the impact of existing and future energy efficiency programs via implementation of ISO 50001.	2018-2019	Technical assistance – international cooperation.	-Fostering of energy efficiency in the private sector.- Regional sharing and adoption of indicators.
Dominican Republic	Energy efficiency in buildings	Development of energy efficiency standards in buildings.	-Development of policies and regulations related to energy efficiency (EE) in public sector buildings, through preparatory studies as a basis for the implementation of strategies and normative instruments that contribute to efficiency and savings in public institutions. -Design and implementation of a pilot	2018-2019	Technical assistance – international cooperation.	Updated, modern and efficient standards, adapted to better international uses.

			<p>energy efficiency program within public buildings. By means of the identification of technological changes in public buildings, energy investment and monitoring measures will be carried out, allowing substantial reductions in energy consumption and mitigation of greenhouse gases.</p> <p>-Monitoring and evaluation of the Project; dissemination of lessons learned through exchange of information, publications in the media, and documents systematizing results and lessons learned.</p>			
Saint Lucia	Building Retrofits	To reduce energy consumption in government buildings by 20%.	Undertake building energy retrofits at a number of government buildings.	2017	Renewable Energy Division: - Technical Support.	Reduction in consumption of the building in which energy efficiency retrofits are undertaken.
Saint Lucia	Street Lighting	To reduce consumption of energy from street lighting.	Replacement of the 21, 000 street lights with more efficient LED lights.	2018-2021	Renewable Energy Division / St. Lucia Electricity Services Limited -Technical Support.	This is expected to lead to over 5300 MWh reduction in consumption per year once this retrofit is completed.
Saint Lucia	Transport	Transition of current Government fleet of vehicles to a more efficient one using suitable technology.	Development of a Fleet Transition Strategy and Roadmap to transition the current Government fleet of vehicles to a more efficient one using suitable technology.	2017-2018	Renewable Energy Division: -Technical Support. Economic Commission for Latin America and the Caribbean (ECLAC): -Technical Support. Government of Italy: -Financial Support.	To reduce energy consumption in the public sector through the use of electric vehicles.
Saint Lucia	Green Architecture Pilot Promotion	<p>To improve energy efficiency and reduce national greenhouse gas (GHG) emissions, through the use of green design principles, and green technologies.</p> <p>To document and promote best practices in green design.</p>	<p>-Efficient renewable energy generation, including installation of solar photovoltaic systems.</p> <p>-Water management, including rain water harvesting to provide non-portable water to be used in efficient toilets &amp; bathroom fixtures, and for irrigation.</p> <p>-Climate resilient agriculture through</p>	2017-2018	<p>Renewable Energy Division: -Technical Support</p> <p>Financial Support: -Japan Caribbean Climate Change Project</p>	<p>-Green Architecture incorporated in designs island wide.</p> <p>-Increased use of green technology in Agriculture and buildings.</p>

			<p>greenhouse infrastructure using gravity-fed irrigation sourced from harvested rain water.</p> <p>-Provide LEED certification training for architects.</p>			
Trinidad and Tobago	Energy Efficiency (EE) in buildings	To increase Energy Efficiency in commercial and residential buildings through the development and national adoption of a Regional Energy Efficiency Building Code (REEBC)	<p>Format:</p> <p>-Development of working draft and project schedule established.</p> <p>-Comments solicited from Member States (MS), and included in the Standard to produce a Final Draft CARICOM Standard (FDCS).</p> <p>-MS review and consult with relevant stakeholders.</p> <p>-Final editing and publication of the approved Standard takes place.</p> <p>-Public Consultation and National adoption of Code – voluntary basis.</p> <p>-Decision on making the EE Code mandatory.</p> <p>-Standards are systematically reviewed after five (5) years.</p>	1 year – 1.5 years (Q1 2019)	GIZ, REETA, IDB, CDB	<p>-Development of a Regional Energy Efficiency Building Code.</p> <p>-Development of Standards for energy efficiency in buildings with all technical requirements set out.</p> <p>-Harmonization and Socialization with the rest of the CARICOM regarding the REEBC</p> <p>-Support the reduction of electricity consumption in residential and commercial buildings through the development and implementation of the REEBC.</p> <p>-Training and development of local personnel with replication on a Regional level with specific skill sets required for implementation of the EE Code.</p> <p>-Energy Efficiency promotion in the private sector.</p>

## PILLAR 2: RENEWABLE ENERGY

Executor country	Specific Topic	Objective	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Antigua and Barbuda	Development of Wind Energy	To harness Antigua and Barbuda's wind energy resource in order to reduce fossil fuel imports and the country's contribution to greenhouse gas emissions.	Feasibility study and installation of wind energy at select sites across the nation, to transition Barbuda's electricity production towards green energy.	24 months	Multilateral financing agencies, national utility, national government, local government authorities.	Diversification of A&B's energy mix with the Integration of wind energy into Antigua and Barbuda's electricity network resulting in technology transfer, reduction of greenhouse gas emissions and reduction of imported fossil fuels.
Dominica	Development and Commissioning of a 7 Mega Watt Geothermal Power Plant by the end of December 2017.	<ul style="list-style-type: none"> <li>-To provide low-cost, reliable, consistent and sustainable electricity to domestic consumers of electricity.</li> <li>-To provide a high level of energy security in Dominica.</li> </ul>	<p>CARICOM ; OECS; OAS; European Union; Government of France; French Overseas Departments of Guadeloupe and Martinique; Government of the United Kingdom; Government of New Zealand; World Bank; SIDS SOCK; United Arab Emirates (CREF);</p> <p>To harness indigenous geothermal resources to generate power and fulfill the energy needs of the population while ensuring competitive energy costs, limiting impact on the local environment and reducing greenhouse gases emissions.</p>	Under implementation commissioning scheduled for December 2019.	<ul style="list-style-type: none"> <li>-Sources of funding scheduled are the World Bank (IDA and CTF), UK/DIFID, SIDS, the Government of New Zealand (technical assistance) and the Government of Dominica. Further funding sources include the UAE-Caribbean Renewable Energy Fund.</li> </ul>	<ul style="list-style-type: none"> <li>-Sustainable use of a local natural and "renewable" resource.</li> <li>-Consistent and reliable supply of high quality, low cost electricity.</li> <li>-Reduction in electricity tariffs.</li> <li>-Increased and acceptable level of energy security in Dominica.</li> <li>-Significant reduction in CO2 in Dominica.</li> <li>-Internationally approved and recognized application of a sustainable energy resource in a SIDS.</li> <li>-Increase in the policy, regulatory, and technical capacity for renewable (geothermal) energy development.</li> <li>-Increased local and foreign direct investment and economic activity.</li> </ul>
Ecuador	Expansion of generation with renewable systems and their complementarity with traditional sources.	To apply sustainable energy technologies in exploiting renewable sources of energy to generate electricity, giving priority to projects with high monthly plant capacity factors supplementing conventional generation.	<ul style="list-style-type: none"> <li>-Developing and optimizing a portfolio of supplementary renewable generation and power storage projects for continental Ecuador and the Galapagos Islands.</li> <li>-Updating solar and wind power resource atlases.</li> </ul>	2008-2015	MEER; INER; ELECGALAPAGOS, CNEL, INAMHI	Ecuador's wind-power and solar resource atlases updated by 2018/Portfolio of supplementary renewable energy generation projects available by 2018.

			-Helping with the generation projects required for the National Interconnected System (S.N.I.) and for the Galapagos Islands, as per the 2016-2025 Generation Expansion Plan, by exploiting local energy resources. Interagency cooperation to maximize proposed objectives.			
Ecuador	Replacement of fossil fuels by renewable energy.	To change the energy matrix so as to boost the productive sector with a focus on sustainable domestic agroindustry for export.	Changing from fossil fuel to renewable energy in order to strengthen the shrimp, banana, cocoa and corn sectors.	2017-2022	Ministry of Electricity and Renewable Energy and electricity companies.	60% of fossil fuels replaced by renewable energy.
Ecuador	Norms and labelling for renewable energy systems	To develop the necessary norms, mechanisms and tools to determine the participation of renewable energy sources in supplying the energy consumption of buildings, specifically sanitary hot water.	To develop the chapter- of the Ecuadorian Building Regulation (NEC) - Renewable Energies - Thermal Solar Systems For Sanitary Hot Water - Applications Below 100°C. To elaborate the Ecuadorian Technical Norm: NTE INEN 2507 "Thermal performance of solar collectors. Requirements." To develop the Project Copant 152-010 (Esp) - Energy Efficiency - Systems And Equipment For Solar Water Heating - Specifications And Labelling	2015-2017	MEER, MIDUVI, INEN, INER, MIPRO, ESPE, EPN, PUCE, Metropolitan Public Habitat and Housing Company-EPMHV, Construction Industry Chamber -CAMICON, College of Mechanical Engineers of Pichincha-CIMEPI, College of Architects of Ecuador-CAE, College of Civil Engineers of Pichincha-CICP, Association of Ecuadorian Municipalities-AME, Incoyam Cia. Ltda., Technova Sol Cia. Ltda., Natural Heat.	By 2017 to have approved technical regulations for: NEC - Renewable Energies – Thermal Solar Systems for Sanitary Hot Water – Applications Under 100 °C. Ecuadorian Technical Norms: NTE INEN 2507 "Thermal performance of solar collectors. Requirements". Copant 152-010 (Esp) - Energy Efficiency - Systems and Equipment for Solar Water Heating - Specifications and Labelling
El Salvador	Promotion of biogas for small-scale electricity generation.	Use agricultural, agro-industrial, residential and industrial waste for small-scale electric power generation and develop final waste treatment mechanisms to promote a cleaner and more comfortable environment to the population located in the vicinity of agricultural and industrial complexes.	Produce a proposal and develop a tender process for electric energy focused on small electric generation projects that use bio-waste produced biogas as a primary input of generation.	2017-2018	A multi-institutional team composed by the Regulated entity, the institution responsible for assessing energy policy, the Ministry environment, and electricity distribution companies.	To contract for a period of 10 to 20 years the energy produced by the biogas-based generation plants, thereby disseminating the economic, environmental and social benefits of generating electricity using biogas produced from biological waste, which would eventually promote the development of biogas based technology generation projects.

Honduras	Promotion of unconventional sources of energy.	To diminish the environmental impact on the various ecosystems through systematic collection of solid waste.	Energy production using domestic and industrial solid waste.	2018-2031	Honduras / International cooperation	Habitat recovered. Conservation of water bodies. Employment generation. Preservation of biodiversity. Reduction in pollutant gases.
Dominican Republic	Study for the "Design of a Wind-power -Solar Prospecting Project"	To identify areas with comparative advantages for developing wind-powered and solar energy projects.	Attempting to develop a measurement system with exact data on areas with comparative advantages for developing wind-powered and solar energy projects.	2017-2018	Technical assistance International cooperation.	Design of an hourly measurement system to determine wind and solar energy potential.
Dominican Republic	Pilot project for meeting basic electricity needs of households in areas not served by grids.	To provide electricity using solar photovoltaic technology to the Yacahueque and Catalamatia communities in the Carrera de Yegua district of the Municipality of Las Matas de Farfán, in San Juan province.	Rural electrification using solar panels for the Yacahueque and Ranchito communities, in Las Matas de Farfán, San Juan, DR	2017-2018	RURAL ELECTRIFICATION UNIT (UERS)	Installation of photovoltaic electrification systems to improve electric power supply to communities with precarious access to it.
Dominican Republic	Study to determine micro- and mini- hydroelectric potential nationwide.	To quantify micro- and mini- hydroelectric potential in river basins and sub-basins in the Dominican Republic.	Surveying and quantification of sites with most potential for installing hydroelectric power generation systems.	2018-2020	Technical assistance International cooperation.	Discovery of places suitable for mini hydroelectric plants.
Dominican Republic	Plant for manufacturing briquettes from biomass on the DR-Haiti border.	To study biomass potential for a briquette manufacturing plant using forest biomass in the DR-Haiti border area, as a way of increasing wood industry value-added.	Conducting studies for and installing a pilot plant.	2018-2019	Inter-American Development Bank (IDB)	Technical advice and support for implementation of the briquette plant, sales, and marketing.
Dominican Republic	Project to reduce greenhouse gas emissions in the energy industry.	To transition to a cleaner, safer, and sustainable energy matrix.	Capacity-building for key players involved with climate and energy policies, with a view to meeting national climate-related goals and international commitments.	2018-2020	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	Progress toward the achievement of national climate-related goals and relevant international commitments through support for key institutions involved with climate and energy sector policy.

Dominican Republic	Implementation of an urban solid waste pilot plant.	To have a plant producing energy from biomass, specifically in the solid waste sector.	Installation of a pilot plant.	2018-2020	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	Construction costs worked out, new technologies implemented, clean energy, experience with handling urban solid waste (USW).
Dominican Republic	Study on the use of smart networks.	To integrate renewable energy in existing networks.	Obtaining information for improving the integration of renewable energies into electricity grids, including regulatory changes and data regarding management and use.	2018	Technical assistance - International cooperation.	Improved energy efficiency and increased opportunities for economic growth through smart networks.
Saint Kitts and Nevis	Developing the human resource capacity to operate a geothermal plant.	Training for locals to be employed in the operation and maintenance of these plants will be required with a particular aim of engaging them at the highest level in this industry.	-Training on Geothermal plant administration. -Training on geothermal plant operations. -Training on geothermal plant maintenance. -Attachments to geothermal plants.	3 years	International org., for instance, UNIDO, ECPA, PNUD, Coordination: Ministry of Infrastructure, Post, Urban Development and Transport.	Nationals of St. Kitts and Nevis who are capable of managing the operations, and maintenance of geothermal plants.
Saint Lucia	Geothermal Energy	To increase renewable energy penetration, energy security and energy independence through indigenous sources of energy.	To follow the geothermal roadmap through implementation of a 30 MW Geothermal Plant.	2015-2023	Technical Support: Government of New Zealand and: Clinton Climate Initiative Financial Support: GEF through the WB.	A 15- 30 MW Geothermal Plant in operation.

**PILLAR 3: EFFICIENT USE OF FOSSIL FUELS**

Country Leading the Initiative	Specific Topic	Objective	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Dominican Republic	Natural gas	To facilitate the massification of the use of natural gas in the different productive sectors of the Dominican Republic.	<ul style="list-style-type: none"> <li>- Feasibility study on bringing natural gas to homes, replacing intensive use of liquefied petroleum gas (LPG).</li> <li>-Evaluation and adjustment of the regulatory framework and formulation of national policy on the import, storage, sale, and uses of natural gas.</li> </ul>	2018	Technical assistance – International cooperation	<ul style="list-style-type: none"> <li>-Study completed with the proposed recommendations.</li> <li>-Study results shared with other countries in the region.</li> <li>-Regulatory framework adjusted and national policy formulated.</li> </ul>
Dominican Republic	Natural gas	Increase the supply of natural gas at competitive prices and facilitate its adoption in the different productive sectors of the Dominican Republic.	Feasibility study for building a new natural gas terminal in the northern part of the country.	2018	Technical assistance – international cooperation.	Study completed with its findings and recommendations proposed.
Ecuador	Incentives for the incorporation of new technologies in transport, and the generation of local technical abilities in efficient driving.	<ul style="list-style-type: none"> <li>-To establish mechanisms that encourage the importation/domestic manufacture of vehicles that are hybrid, electric or with new technologies.</li> <li>-Generation of local technical abilities in efficient driving.</li> <li>-To provide accurate information on the fuel performance of vehicles and the associated CO2 emissions.</li> <li>To establish mechanisms that promote the importation/domestic manufacture of vehicles that are hybrid, electric or with new technologies.</li> </ul>	<ul style="list-style-type: none"> <li>-To promote the importation/domestic manufacture of vehicles that are hybrid, electric or with new technologies.</li> <li>-Create agreements with manufacturers, assemblers and importers.</li> <li>-To develop regulations for new vehicle technologies, that include follow-up and oversight.</li> <li>-Training in efficient driving as a requirement to obtain a driver's license.</li> <li>-Executions of a training program in efficient driving (Eco Driving).</li> <li>-To articulate training with driving schools and specialised centres.</li> </ul> <p>Monitoring, follow-up and oversight of the commercialisation of labelled vehicles.</p> <ul style="list-style-type: none"> <li>-To drive the importation/domestic</li> </ul>	2020-2032	MTOP, ANT; AMT, AME; GADs; AEADE; COMEX, ; Driving schools; Academia; Transport cooperatives	<p>By 2020: Natural introduction of new technologies in the market. Development of regulations.</p> <p>By 2035: Energy avoided 144.76 Mbep</p> <p>By 2019: Norms exist and Eco Driving measures Normativa existente y medidas de Eco Driving taught in driving schools.</p> <p>By 2035: Energy avoided by efficient construction measures equivalent to 71.60 Mbep</p> <p>By 2032: Energy performance labelling implemented in new vehicles.</p> <p>By 2035: Energy avoided through the incorporation of new transport technologies is 173.41 Mbep.</p>

			<p>manufacture of vehicles that are hybrid, electric or new technologies.</p> <ul style="list-style-type: none"><li>-To continue with the implementation of the energy labelling program for electric equipment and new vehicles.</li><li>-Development of regulations for new vehicle technologies.</li><li>-Identification of vehicle baseline.</li></ul>			
--	--	--	--	--	--	--

## PILLAR 4: ENERGY INFRASTRUCTURE

Country Leading the Initiative	Specific Topic	Objective	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Antigua and Barbuda	Upgrading and modernization of transmission and distribution networks.	Replacement of aged electricity transmission and distribution network to improve upon energy efficiency and enhance climate resilience.	Sourcing, installation and operationalization of new equipment for the national electricity infrastructure.	20 months	Multilateral financing agencies, national utility, national government.	Significant reduction in line losses and improvements in energy efficiency leading to lower greenhouse gas emissions, fuel imports, and reduced costs for electricity consumers.
Honduras	Rural electrification with Renewable Distributed Generation (RDG), according priority to remote areas.	-To combine interconnected system expansion projects with distributed generation projects and self-production, making the most of local renewable energy sources to improve national electricity systems.	-Rural Energization Program with small energy generation projects, above all those with studies at the feasibility or more advanced stage that can be constructed in the short term. Participation of the local population in the management of its energy resources, enhancing of local capacities, and efforts to make systems sustainable.	2018-2023	Honduras / International cooperation	-Demand for electricity consumption met. -Socioeconomic development of communities in remote areas

**PILLAR 5: ENERGY POVERTY**

Country Leading the Initiative	Specific Topic	Objective	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Ecuador	Rural electrification in remote areas using renewable sources.	To increase electricity coverage in remote rural areas of Ecuador using renewable energy.	The Ministry of Electricity and Renewable Energy is currently implementing the Rural Electrification with Renewable Energies in Remote Areas project, jointly with the electricity distribution companies whose concession areas contain remote communities without conventional forms of energy. The project focuses on installing photovoltaic systems in rural communities in the Ecuadorian Amazon Region.	2013-2018	MEER; IDB; Global Environment Facility; Multilateral Investment Fund; Empresa Eléctrica Ambato S. A; Empresa Eléctrica Regional Centro Sur S. A; EP CNEL UN Sucumbíos; Empresa Eléctrica Regional Sur S.A; ARCONEL.	By 2018, service will be provided to 49 communities in the Ecuadorian Amazon Region thanks to the installation of 623 separate photovoltaic systems and 19 photovoltaic systems in micro networks, providing total installed capacity of 397.10 kWp.
Honduras	Promotion of appropriate technologies for reducing firewood consumption.	To promote access to modern clean energy services and appropriate technologies to safeguard public health and reduce adverse impacts on the environment.	Provision of improved cooking systems, such as eco-stoves.	2018-2023	Honduras / International cooperation	-Increased awareness among the population of the consequences of using firewood as a fuel in terms of greenhouse gas emissions. -Reduced per capita consumption of firewood.

**PILLAR 7: ENERGY RESEARCH AND INNOVATION**

Country Leading the Initiative	Specific Topic	Objective	Activity Description	Implementation Period	Coordination / Sponsorship	Expected Results
Ecuador	Implementation of cogeneration.	To encourage industrial sectors to implement cogeneration systems by establishing a favorable environment.	<p>Promoting studies for pilot schemes.</p> <ul style="list-style-type: none"> <li>-Promoting the implementation of cogeneration systems in industries.</li> <li>-Analyzing policies and incentive mechanisms to promote the implementation of cogeneration measures in the various different industrial sub-sectors, as a way to increase competitiveness.</li> <li>-Sharing the findings of the study on the National Potential for Cogeneration and Trigeneration, which includes mechanisms and calculation methods, as well as case studies.</li> <li>-Establishing private sector monitoring and follow-up mechanisms for assessing progress made with energy efficiency nationwide.</li> <li>-Exchanges of information on successful experiences, especially as regards financing mechanisms for cogeneration technologies.</li> </ul>	2017 -- 2020	MEER MIPRO; MAE; manufacturers' associations.	By 2022: Implementation of cogeneration pilot projects in selected industries.