

# ENERGY COMPACT

 **EC10: ENABLE THE SDGs THROUGH FAIR AND INCLUSIVE ENERGY TRANSITIONS: Water, Energy and Food Security Nexus using renewable energies**



**United Nations**



HIGH-LEVEL DIALOGUE ON  
**ENERGY**  
UNITED NATIONS, NEW YORK, SEPTEMBER 2021

**UN** ENERGY



## SECTION 1: AMBITION

### 1.1. Ambitions to achieve SDG7 by 2030. [Please select all that apply]

(Member States targets could be based on their NDCs, energy policies, national five-year plans etc. targets for companies/organizations could be based on their corporate strategy)

**7.1.** By 2030, guarantee universal access to affordable, reliable and modern energy services.

Target(s):

**1. Promote the implementation of energy systems from renewable sources to contribute to food security and community development, strengthening resilience to natural climatic events.**

Time frame: 2030

Context:

Honduras has more than two million hectares with the potential to develop agricultural intensification projects. The 31 valleys add up to 780,000 hectares with a lot of potential, but little diversified production. Much of the agriculture is carried out on slopes, mainly coffee, basic grains, and vegetables. With good management of natural resources and adequate investment, this has the potential to achieve greater production and productivity, efficiency, competitiveness and consolidated the sector not only as the largest generator of employment in the country, but also to improve quality. of this. Between 2015-2019, agricultural activities grew at an annual average of 3.9%, slightly above the GDP average of 3.8%, despite the 1% contraction in 2019, because of a prolonged drought.

According to the Project Concept Note, the communities of Plan de Barrios and Zapotillo are located in the municipality of San Francisco de Opalaca, department of Intibucá, 58 kilometers from the city of La Esperanza, with a population of approximately 900 inhabitants whose economy is based on the production of basic grains for self-consumption. Its energy needs are covered by burning biomass, batteries and kerosene brought from the nearest cities.

Currently, the only access road to the communities is a dirt road in highly risky conditions, which were destroyed during the tropical storms ETA and IOTA, resulting in these communities totally cut off and with an absence of sources of supply for food, medicine, telephone services and electricity.

Additionally, the Azacualpita community located in the municipality of Opatoro, department of La Paz, bases its economy on subsistence agriculture, cultivating only basic grains for family consumption. This community had no electricity supply.

For some time, these communities have conceived the initiative to develop an electrification project to break the historical isolation, through the implementation of a hybrid electricity generation system of renewable energies. This initiative contributes to improving the quality of life of the inhabitants, improving their food security, local development, the sustainable use of natural resources and creating resilience capacities to face climatic events.

Electricity from renewable energy sources does not by itself generate the conditions for rural development, however it is an essential element for people's basic needs and economic activity.

The study "Green and Inclusive Energy Project: SICA Countries" establishes that large investments in rural electrification projects generate positive effects on the social and economic development of electrified communities, however, it has some limitations. Two of the most important factors limiting the productive use of electricity are: the lack of technical knowledge and skills of the users and the financial means to acquire the equipment for their projects.

By 2050, there will be an 80% increase in energy needs, a 55% increase in water needs and a 60% increase in food demand (IRENA, 2015). 70% of the world's water extraction is for agriculture, that is, for food production (FAO, 2011a) and the food production and supply chain requires around 30% of the total energy consumed (FAO, 2011b). It is expected that the current situations of imbalances and deficits in energy and water needs will be exacerbated in the future (IEA, 2010). Thus, food production must increase by 60% to feed the world population in 2050. Energy consumption will have increased by up to 50% no later than 2035 and by 2050, the world total of water extraction for irrigation will have increased by 10%.

## SECTION 2: ACTION TO ACHIEVE THE AMBITION

2.1. Please add at least one key action for each of the elaborated ambition(s) from section 1. *[Please add rows as needed].*

7.1. By 2030, ensure universal access to affordable, reliable, and modern energy services.

**1. Promote the implementation of energy systems from renewable sources to contribute to food security and community development, strengthening resilience to natural climatic events.**

**1.1 Development of an electrification project for the community of Azacualpita through an electric microgrid using a hybrid electric power generation system scheme.**

- Operation of the project with energy potential of 6 kW wind and 6.4 kW photovoltaic per hour, comprising a total of 12,400 Watts/hour, supplying the microgrid of 22 homes with a resource of 400 Watts per home. The generation of energy through renewable sources that contributes to the electrification of homes for home use, also contributes to the public lighting system of the community. The residents allocate the availability of electricity for activities that contribute to food security such as the transformation of agricultural products for commercialization, food refrigeration, establishment of seed banks, among others.
- Documentation of experiences of the beneficiary community on the adoption of renewable energy systems for self-sufficiency.

*January 2022 – March 2022*

**1.2 Development of an electrification project for the Plan de Barrios and Zapotillo communities through the construction of an electric microgrid using existing hydroelectric potential in the area and complementary work on a medium and low voltage distribution network, as well as the provision of independent photovoltaic solar energy supply systems for homes that cannot be integrated into the distribution network.**

- Preparation of the project profile.
- Characterization of the energy consumption demand of the community.
- Execution of the project with the following characteristics: through the construction of a hydroelectric generation plant of 60 Kwp, photovoltaic solar plant with 120 Kwp of solar panels, battery bank of 6 groups with storage capacity of 150 Kwh per group, 2 inverters of 50 Kw each for the connection of the solar modules, 6 network managers of 20 Kw each, with the possibility of creating the three-phase electrical network and charging or supplying energy from batteries, intelligent consumption meters (Smart-meters), data acquisition system for the management of energy generation and demand, system of transmitting antenna - receiving cell phone waves and electrical distribution network.
- Strengthening of capacities through the local preparation for operation and maintenance of 10 people from the community.
- Awareness of the beneficiary population about the comprehensive vision of the water-energy-food nexus when promoting community development actions, forming an integral participation of all its inhabitants in the execution of actions for the common good.
- Implement a monitoring and auditing program for the project to validate the adoption of the system:
  - o Development of the methodology for the evaluation and monitoring of the implemented project.
  - o Evaluation of the adoption of renewable energy systems and the impact on the beneficiary communities.
  - o Documentation of experiences of beneficiary communities on the adoption of renewable energy systems for self-sufficiency.

*June 2022- December 2024*

**1.3 Replicate and promote according to the lessons learned and results generated from the electrification initiatives of the communities of Azacualpita, Plan de Barrios and Zapotillo in other rural communities with agro-productive potential:**

- Lifting of the baseline on productive uses of electricity in the country, identifying areas with productive potential by geographical area.
- Elaboration of a diagnosis on the productive sector and its possible energy needs to provide added value, considering a territorial and gender approach.
- Develop a methodology and strategy for the implementation of programs based on the needs of electricity generation and energy efficiency, which guarantee added value to the local economy through productive uses in the agricultural area such as photovoltaic irrigation and pumping systems, establishment seed banks, agricultural product transformation processes, food preservation and refrigeration, among others.
- Execution of at least 15 projects in the same number of communities in rural areas without access to electricity and that have potential for generation, which guarantees added value to the local economy and the use in end uses and food security.

*January 2024 – December 2028*

- Preparation of procedure manuals for the implementation of projects with electrical micro-grids.
- Provide the use of lighting equipment, refrigeration, electrical appliances, pumping equipment and other high efficiency certificates in projects, in accordance with current regulations.
- Identification of the necessary investment funds and executing entity.
- Integration of environmental evaluation and compensation mechanisms during the formulation processes of energy projects.

**1.4 Public awareness, capacity building and establishment of strategic alliances to contribute to the implementation of new projects and their sustainability.**

- Establishment of a multisectoral commission made up of different key actors and levels of governance, led by the Secretariat of Energy (SEN) to articulate projects related to the productive uses of electricity and provide follow-up to investment plans.
- Establish strategic inter-institutional alliances with the National Institute of Forest Conservation, Protected Areas and Wildlife (ICF) and the Secretariat of Natural Resources and Environment (MI AMBIENTE) to provide training and awareness among users on the sustainable use of natural resources: encourage the protection of these resources through the integrated management of the hydrographic basins and conservation of the forest resource. Likewise, with the Secretariat of Agriculture and Livestock (SAG) in coordination with the Secretariat of Energy (SEN) to provide support and continuous technical assistance to users under a comprehensive and sustainable production approach.
- Definition of mechanisms for access to financing, the granting of green funds through the regulations established by the financial institutions that guarantee climate financing schemes.
- Creation of technical capacities and establishment of financial mechanisms at the community level to achieve the sustainability of the actions implemented.
- Impact evaluation analysis of projects executed to strengthen the energy, water, and food security nexus.

*January 2022 – January 2025*



## SECTION 4: REQUIRED RESOURCES AND SUPPORT

4.1. Please specify required finance and investments for **each** of the actions in section 2.

The estimates of the investments necessary for the fulfillment of the actions were based on the Project Sheet of the Plan for Reconstruction and Sustainable Development prepared by the Secretariat of Energy (SEN) of Honduras and the Base Document for the Electricity Green and Inclusive Energy Project SICA countries:

1.1 Activity: Development of a project to electrify the community of Azacualpita through an electric microgrid using a hybrid electric power generation system scheme.	Supplies	Value (USD)
Workshops to systematize the experiences of the beneficiary community on the adoption of renewable energy systems for self-sufficiency.	<ul style="list-style-type: none"> <li>• Workshops to exchange experiences</li> <li>• Application of surveys</li> <li>• Consulting services</li> </ul>	USD \$40,000.00
1.2 Activity: Development of an electrification project for the Plan de Barrios and Zapotillo communities through the construction of an electrical microgrid using existing hydroelectric potential in the area and complementary work on a medium and low voltage distribution network, as well as the provision of generation systems of photovoltaic solar energy for homes that cannot be integrated into the distribution network.	Supplies	Value (USD)
<ul style="list-style-type: none"> <li>- Preparation of project profile and execution of work. Electrification of the Plan de Barrios and Zapotillo communities implementing renewable energies.</li> <li>- Project performance evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>• Construction equipment and materials</li> <li>• Costs of mobilization of personnel</li> <li>• Training workshops</li> <li>• Fee of the personnel that executes the project</li> <li>• Furniture and project equipment</li> </ul>	USD \$ 900,000.00
1.3 Activity: Replicate and promote according to the lessons learned and results generated from the electrification initiatives of the communities of Azacualpita, Plan de Barrios y Zapotillo in other rural communities with agro-productive potential:	Supplies	Value (USD)
<ul style="list-style-type: none"> <li>- Lifting of the baseline and elaboration of a diagnosis of productive potential by geographical area of the country.</li> <li>- Preparation of the implementation strategy of the programs.</li> <li>- Preparation of procedure manuals for the implementation of projects with electrical micro-grids.</li> </ul>	<ul style="list-style-type: none"> <li>• Consulting services</li> <li>• Mobilization costs</li> <li>• Tools for gathering information</li> </ul>	USD \$500,000.00
<ul style="list-style-type: none"> <li>- Preparation of investment plans and execution of projects for access to electricity with electrical micro-grids.</li> <li>- Project performance evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>• Construction equipment and materials</li> <li>• Personnel mobilization costs</li> <li>• Training workshops</li> <li>• Fee of the personnel that executes the project</li> </ul>	USD \$3,449,387.00
1.4 Activity: Public awareness, capacity building and establishment of strategic alliances to contribute to the implementation of new projects and their sustainability.	Supplies	Value (USD)
<ul style="list-style-type: none"> <li>- Creation of a multisectoral commission of key actors, levels of governance for the establishment of strategic alliances.</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops</li> </ul>	USD \$40,000.00
<ul style="list-style-type: none"> <li>- Workshops to systematize the experiences of the beneficiary</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops to exchange experiences</li> </ul>	USD \$80,000.00

communities on the adoption of renewable energy systems for self-sufficiency. - Impact evaluation analysis of projects executed to strengthen the energy, water, and food security nexus.	<ul style="list-style-type: none"> <li>• Application of surveys</li> <li>• Consulting services</li> <li>• Tools for gathering information</li> </ul>	
<b>TOTAL</b>		<b>USD \$ 5,009,387.00</b>

4.2. [For countries only] In case support is required for the actions in section 2, please select from below and describe the required support and specify for which action.

*[Examples of support for Member States could include: Access to low-cost affordable debt through strategic de-risking instruments, capacity building in data collection; development of integrated energy plans and energy transition pathways; technical assistance, etc.]*

<input type="checkbox"/> Financing	
<input type="checkbox"/> In-Kind contribution	<i>Technical capacities of the Secretariat of State in the Energy Office (SEN), National Directory of Energy Planning and Sector Energy Policy (DNPEPES), Honduran Council of Private Enterprise (COHEP), Municipal Mayors, Secretariat of Natural Resources and Environment (MI AMBIENTE), Secretariat of Agriculture and Livestock (SAG), National Institute of Forest Conservation, Protected Areas and Wildlife (ICF), Institute of Community Development of Water and Sanitation (IDECOAS), among others.</i>
<input type="checkbox"/> Technical Support	<i>Consultancies for manuals, plans, strategies, baselines</i>
<input type="checkbox"/> Other/Please specify	<i>Non-reimbursable cooperation for the execution of the activities; there's approximately a budget of <b>USD \$ 5,009,387.00</b> (five million nine thousand three hundred eighty-seven dollars).</i>

## SECTION 5: IMPACT

5.1. Countries planned for implementation including number of people potentially impacted.

Republic of Honduras and through the implementation of the project, the beneficiary population of the communities of 1,000 people distributed in 186 homes; the generation of direct and indirect jobs of 90 people will be promoted. Additionally, the impact on the population of the different communities in the areas of agricultural production potential in the country is identified.

**5.2. Alignment with the 2030 Agenda for Sustainable Development – Please describe how each of the actions from section 2 impact advancing the SDGs by 2030.**

*[up to 500 words, please upload supporting strategy documents as needed]*

In relation to SDG 7, the implementation of projects of energy generation systems through renewable sources contribute to access to affordable energy services and the national energy matrix is diversified, raising awareness among the population about the use of sustainable systems, which contribute to the improvement of the quality of life, guaranteeing the supply of basic services, food security through the production, cooking, transformation and preservation of food, transfer of resilience capacities of the beneficiary communities, in the face of climatic events that may cause damage. Likewise, it is related to compliance with SDG 1, SDG 2, SDG 6, SDG 12.

**5.3. Alignment with Paris Agreement and net-zero by 2050 - Please describe how each of the actions from section 2 align with the Paris Agreement and national NDCs (if applicable) and support the net-zero emissions by 2050.**

*[up to 500 words, please upload supporting strategy documents as needed]*

Sustainable rural development is encouraged as established by objectives 3 and 10 of the NDC-Honduras through the improvement of the population's livelihoods, creating resilience capacities, awareness in the sustainable use of natural resources such as soil, water, which results in the generation of a productive, competitive economy for collective well-being and food production. The adoption of renewable energy generation systems that contribute to the reduction of GHG emissions as established by Goal 4 on Renewable Energies and is interrelated with Goal 9, which ensures the availability of water resources to contribute to the food security of the communities.



## **SECTION 6: MONITORING AND REPORTING**

6.1. Please describe how you intend to track the progress of the proposed outcomes in section 3. Please also describe if you intend to use other existing reporting frameworks to track progress on the proposed outcomes.

**Monitoring 1:**- Socio-environmental impact assessment report of the project execution.

**Monitoring 2:** - Monthly project implementation report prepared by the work executing company.

- Project installation delivery certificate received by community representatives.
- Socio-environmental impact assessment report of the project.
- Performance evaluation report and audit of the project execution.
- Report on the results of training given to community personnel for the operation and maintenance of the system.
- Evaluation report of the impact of the project in the community in a term of 5 years after its execution.

**Monitoring 3:**- Final documents on the elaboration of a map of productive potential by geographical area, diagnostic document, and implementation strategy.

- Investment plan for at least 15 projects to be developed, establishing financing mechanisms and executing entities.
- Monthly meetings with the consulting team in charge of preparing the procedure manuals for the implementation of micro-networks projects.
- Report on the number of projects that include certified high-efficiency equipment.
- Evaluation report of the impact of the projects in the communities in a term of 5 years after the execution.

**Monitoring 4:**- Development of semiannual meetings by the multisectoral commission, for the establishment of institutional strategic alliances and identification of mechanisms and financial resources.

- Report on the results of training sessions given to community personnel on the sustainable use of natural resources and a comprehensive and sustainable production approach.
- Report on the results of trainings given to community personnel on technical aspects and financial mechanisms to achieve the sustainability of the implemented actions.

## SECTION 7: GUIDING PRINCIPLES CHECK LIST

Please use the checklist below to validate that the proposed Energy Compact is aligned with the guiding principles.

Stepping up ambition and **accelerating action** - Increase contribution of and accelerate the implementation of the SDG7 targets in support of the 2030 Agenda for Sustainable Development for Paris Agreement

*I.1 Does the Energy Compact strengthen and/or add a target, commitment, policy, action related to SDG7 and its linkages to the other SDGs that results in a higher cumulative impact compared to existing frameworks? X Yes No*

*I.2 Does the Energy Compact increase the geographical and/or sectoral coverage of SDG7 related efforts? X Yes No*

*I.3 Does the Energy Compact consider inclusion of key priority issues towards achieving SDG7 by 2030 and the net-zero emission goal of the Paris Agreement by 2050 - as defied by latest global analysis and data including the outcome of the Technical Working Groups? X Yes No*

**II. Alignment with the 2030 agenda on Sustainable Development Goals** – Ensure coherence and alignment with SDG implementation plans and strategies by 2030 as well as national development plans and priorities.

*II.1 Has the Energy Compact considered enabling actions of SDG7 to reach the other sustainable development goals by 2030? X Yes No*

*II.2 Does the Energy Compact align with national, sectoral, and/or sub-national sustainable development strategies/plans, including SDG implementation plans/roadmaps? X Yes No*

*II.3 Has the Energy Compact considered a timeframe in line with the Decade of Action? X Yes No*

**III. Alignment with Paris Agreement and net-zero by 2050** - Ensure coherence and alignment with the Nationally Determined Contributions, long term net zero emission strategies.

*III.1 Has the Energy Compact considered a timeframe in line with the net-zero goal of the Paris Agreement by 2050? X Yes No*

*III.2 Has the Energy Compact considered energy-related targets and information in the updated/enhanced NDCs? X Yes No*

*III.3 Has the Energy Compact considered alignment with reaching the net-zero emissions goal set by many countries by 2050? X Yes No*

**IV. Leaving no one behind, strengthening inclusion, interlinkages, and synergies** - Enabling the achievement of SDGs and just transition by reflecting interlinkages with other SDGs.

*IV.1 Does the Energy Compact include socio-economic impacts of measures being considered? X Yes No*

*IV.2 Does the Energy Compact identify steps towards an inclusive, just energy transition? X Yes No*

*IV.3 Does the Energy Compact consider measures that address the needs of the most vulnerable groups (e.g. those impacted the most by energy transitions, lack of energy access)? X Yes No*

**V. Feasibility and Robustness** - Commitments and measures are technically sound, feasible, and verifiable based a set of objectives with specific performance indicators, baselines, targets and data sources as needed.

*V.1 Is the information included in the Energy Compact based on updated quality data and sectoral assessments, with clear and transparent methodologies related to the proposed measures? X Yes No*

*V.2 Has the Energy Compact considered inclusion of a set of SMART (specific, measurable, achievable, resource-based and time based) objectives? X Yes No*

*V.3 Has the Energy Compact considered issues related to means of implementation to ensure feasibility of measures proposed (e.g. cost and financing strategy, technical assistant needs and partnerships, policy and regulatory gaps, data, and technology)? X Yes No*

## SECTION 8: ENERGY COMPACT GENERAL INFORMATION

8.1. Title/name of the Energy Compact **Promote the Water, Energy and Food Security Nexus using Renewable Energies.**

8.2. Lead entity name (for joint Energy Compacts please list all parties and include, in parenthesis, its entity type, using entity type from below)

The leading entity is the Secretariat of State in the Energy Office (SEN), the organizations and entities to assist in the process of compliance with the agreement are the following:

- Government: Secretariat of State in the Office of Natural Resources and Environment (MI AMBIENTE), National Directory of Strategic Planning and Sector Policy (DNPEPES), National Institute of Forest Conservation, Protected Areas and Wildlife (ICF), Secretariat of Agriculture and Livestock (SAG), Presidential Office for Climate Change (Clima +), Presidential Office for Green Economy (OPEV), National Center for Social Information (CENISS), Institute for Community Development of Water and Sanitation (IDECOAS), General Government Coordination Secretariat (SCGG), Ciudad Mujer, Secretariat of Foreign Affairs and International Cooperation (SRECI), National Service of Entrepreneurship and Small Businesses (SENPRENDE).
- Local government: Municipalities.
- Private Sector: Honduran Council of Private Enterprise (COHEP), national bank.
- Civil Society: Livestock sector, agricultural sector, Chambers of Commerce, Association of Municipalities of Honduras (AMHON), Association of Distributed Renewable Energy Solutions Providers of Honduras (APRODERDH), Honduran Association of Banking Institutions (AHIBA), Honduran Association for Development (AHDESA), Associations, Professional Associations, Intibucan Development Foundation (FUNIDE), Sectorial Table for Food and Nutrition Security of Region 13 Gulf of Fonseca (Table SAN-R13-GF), National Indigenous Lenca Organization of Honduras (ONILH), among others.
- Non-Governmental Organization (NGO): Mennonite Social Action Commission (CASM), CDE-MIPYME Business Development Center, among others.
- Academic Institution: Public and private universities such as National Autonomous University of Honduras (UNAH), National University of Forest Sciences (UNACIFOR), Central American Technological University (UNITEC), Zamorano Pan-American Agricultural School, National University of Agriculture (UNA), among others.
- Multilateral / Cooperation Organization: Dutch Service for Development Cooperation (SNV), Central American Bank for Economic Integration (CABEI), Food and Agriculture Organization of the United Nations (FAO), Inter-American Institute for Cooperation on Agriculture (IICA), among others.

8.3 Leading entity type

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> Government                 | <input type="checkbox"/> Local/Regional Government        | <input type="checkbox"/> Multilateral Agency/Intergovernmental Organization |
| <input type="checkbox"/> Non-Governmental Organizations (NGOs) | <input type="checkbox"/> Civil Society Organization/Youth | <input type="checkbox"/> Academic Institution/Scientific Community          |
| <input type="checkbox"/> Private Sector                        | <input type="checkbox"/> Philanthropic Organization       | <input type="checkbox"/> Other relevant actor                               |

8.4. Contact Information

Secretariat of Energy (SEN), Directorate of External Cooperation, E-mail address: dce@sen.hn

8.5. Select the geographical coverage of the Energy Pact

- Africa  Asia and the Pacific  Europe  Latin America and the Caribbean  North America  West Asia  Global

8.6. Please select the Energy Compact thematic focus area(s)

- Energy Access  Energy Transition  Enabling SDGs through inclusive Energy Transitions  Innovation, technology and data  Finance and investments.