

Project fiche:

Energy for Life - 1000 kWp of solar energy for Cuba

General objective:

Contribute to a stable and non-polluting energy supply for healthcare institutions in Cuba, enabling them to provide their health services to the population more effectively.

Specific objective:

Install solar power plants with a capacity of 1000 kWp in several healthcare institutions in Cuba within 3 years, to support the production of medicines and vaccines, the training of specialised personnel, and patient care.

Expected results:

- 1.- To have installed solar plants with a capacity of 1000 kWp in various health institutions in Cuba by 2026.
- 2.- To have consolidated alliances with various European solidarity actors to support the solarisation of Cuban health institutions.
- 2.- To have supported capacity building for the proper maintenance of solar plants in each health institution with which we collaborate.

Problematic:

Cuba has successfully upheld the right to health for its inhabitants in an exemplary and internationally recognized manner. However, since the deep economic crisis of the 1990s, challenges in the supply of medicines, vaccines, and health services have been increasingly felt by the population.

The national industry has the capacity to meet much of the demand for medicines and vaccines, but several constraints hinder its ability to respond, most notably the availability of stable and reliable energy. Dealing with frequent power outages using hydrocarbon-based plants is not only costly and inefficient but also highly polluting and more complex due to ongoing fuel shortages.

Hospitals, health centers, and institutions responsible for staff training are also affected by power shortages, reducing operating hours and impacting the quality of healthcare delivery.

Despite being the only country with a high level of human development and a sustainable ecological footprint, Cuba's energy matrix remains heavily dependent on oil. This reliance extends to electricity generation, which is carried out in largely outdated and inefficient plants. The distribution grid is prone to disruptions and significant transmission losses, which could be reduced by producing energy locally through more sustainable means.

Therefore, energy autonomy through environmentally friendly forms of generation has been identified as a high priority, especially for health institutions. This is clearly stated in Cuba's economic and social policy guidelines under point 113: "Prioritise, in relations with international cooperation organisations, material and technological support in the development of objectives for the use of various renewable energy sources" to achieve the goal of generating 24% of energy from renewable sources by 2030.

Synthesis:

Cuba has successfully guaranteed the right to health, but since the economic crisis of the 1990s, the supply of medicines and health services has faced challenges. Although the national industry is capable of covering much of the demand, its ability is hindered by unstable energy supplies. Power outages affect the production of medicines as well as the quality of services in hospitals and health centres. Due to its dependence on oil, Cuba has prioritised energy autonomy through renewable sources, aiming to reach 24% renewable energy by 2030.

Current situation:

The Swiss organisation Ayuda Médica para Centroamerica (AMCA) decided in 2023 to expand its operations in Cuba, with a focus on supporting solar energy projects in health institutions. During an initial visit, an agreement was reached with Cuban cooperation and health authorities, as well as with the Finlay Institute—which produces vaccines such as the well-known "Soberana" against Covid—to install a 300 kWp solar power plant on the roofs of the institute's industrial buildings. In April 2024, Franco Cavalli (President of mediCubaEurope and Honorary President of AMCA) also committed to supporting two additional projects:

- A pilot plant at the Latin American School of Medicine (ELAM) with 60 kWp

Solidarity organisations in Spain are actively working to secure funding for the upcoming phases of the global solarisation programme of the ELAM energy matrix. This project serves as a catalyst and aims to build and strengthen institutional capacities for the assembly and maintenance of solar plants. The plant's assembly will be carried out as a gesture of solidarity by the installation brigade from the Centre for Molecular Immunology (CIM).

- A solar roof on the car park of the Centre for Molecular Immunology (CIM) with 90 kWp

CIM is a leader in solar plant installations, with over 500 kWp already installed and an additional 800 kWp committed, all on its large, often "invisible" rooftops. Leveraging the ample parking space for the installation of a solar canopy is a strategic idea that achieves four key objectives:

1. Pilot Installation for Cuba: Implement a pilot solar canopy installation in Cuba to serve as a model for other companies, encouraging them to utilize their parking areas for similar solar projects.
2. Enhance Energy Self-Sufficiency: Increase the energy self-sufficiency of the MIC by generating solar power for self-consumption, reducing reliance on external energy sources.
3. Public Awareness: Showcase and promote rooftop solar installations to the public, demonstrating the benefits and feasibility of solar energy solutions.
4. Prepare for Future Needs: Lay the groundwork for the potential installation of an electric vehicle charging station, accommodating future purchases of electric vehicles.

It is important to highlight that all previous procedures have been handled with remarkable ease and efficiency by our Cuban partners and authorities, underscoring the high priority and relevance of these projects.

Criteria for Selecting Cuban Partners:

- Established Cooperative Relationships: The partners were chosen based on existing cooperative ties that demonstrate their commitment and capability.

- **Technical and Financial Capacity:** The selected partners possess the necessary technical (CIM) and financial (CIM and Finlay) resources to support the projects, including technical studies, importation, and installation.
- **Alignment with Health Priorities:** The institutions involved are prioritized by Cuban health authorities, ensuring alignment with efforts to uphold the population’s right to health.

In line with Cuban priorities, MediCubaEurope aims to channel targeted support for solar power projects to these and other initiatives. The goal is, in collaboration with AMCA and other organizations, to install a total of 1000 kWp of solar power capacity within the next three years..

Synthesis:

In 2023, the Swiss organization AMCA decided to expand its operations in Cuba by focusing its support on the installation of solar plants in health institutions. In collaboration with Cuban authorities and the Finlay Institute, it was agreed to install a 300 kWp solar plant at the Finlay Institute.

In April 2024, Franco Cavalli, President of MediCubaEurope and Honorary President of AMCA, committed to supporting two additional projects: a 60 kWp pilot plant at the Latin American School of Medicine (ELAM) and a 90 kWp pilot solar canopy in the parking lot of the Centre for Molecular Immunology (CIM). With 500 kWp already installed, CIM aims to enhance its energy self-sufficiency and set an example for other companies.

All procedures related to these projects have been efficiently resolved, reflecting Cuba's high priority for these initiatives. MediCubaEuropa, together with AMCA and other organizations, plans to install a total of 1000 kWp within three years to contribute to the solarization of Cuba's energy matrix.

Agreed and potential projects (indicative list - several projects to be defined):

Cuban counterpart	Potential to install kWp	Year of execution	Estimated Euro amount
Finlay Vaccine Institute - Phase 1	130	2024 (25)	120.000
Phase 2 (completes phase 1, involves savings)	170	2025	100.000
<i>Phase 3</i>	<i>150-250</i>	<i>2026</i>	
Latin American School of Medicine - pilot phase	60	2024 (25)	70.000
<i>Additional phase</i>	<i>80-120</i>	<i>2026</i>	
Centre for Molecular Immunology - Parking phase 1	58	2024 (25)	82.000
Parking phase 2	28	2025	34.000
<i>Havana Industrial Ceiling</i>	<i>100</i>	<i>2026</i>	
<i>Santiago de Cuba Laboratory (LABEX)</i>	<i>150</i>	<i>2026</i>	
<i>AICA Pharmaceutical Laboratories - industrial roof phase 1</i>	<i>200</i>	<i>2025</i>	160.000
<i>Industrial roof phase 2</i>	<i>100 - 300</i>	<i>2026</i>	

kWh: Optimal power of a plant based on the sum of the capacity of its panels.

Projects for 2026 and with AICA for 2025 are still to be defined.

Estimated power that can be installed per year (current state of prices and technology):

2024: 258 kWp
 2025: 398 kWp
 2026: 344 kWp
Total: 1000 kWp

Potential impacts:

While the overall impact on national energy consumption may be limited, the installation of solar plants at specific institutions will have several important benefits:

- **Reduction in Fossil Fuel Use:** Solar power will decrease reliance on fossil fuels, especially during times when grid electricity is unavailable.
- **Minimized National Grid Losses:** By generating electricity locally, these plants will reduce losses in the national grid and alleviate the grid's burden by supplying the generated power directly to the institutions.
- **Lower Electricity Costs:** The use of solar energy will decrease electricity costs for public utility institutions, leading to significant savings.

Duration: 2024 a 2026

Budget:

It is estimated at 800,000 euros in total:

2024: 280,000 euros - insured to date 240,000 euros, **outstanding 40,000 euros**

2025: 300,000 euros - insured to date 70,000 euros, **pending 230,000 euros**

2026: 220,000 euros - insured to date 50,000 euros, **outstanding 170,000 euros.**

These amounts cover the costs of assembly and start-up, as well as modest follow-up expenses incurred by MediCubaEuropa (mCE)

Funding:

By 2024, mCE has contributed 65,000 euros, while AMCA has committed 175,000 euros to date.

By 2025, AMCA has committed 70,000 Euros and by 2026 50,000 Euros.

Monitoring and reporting:

MediCubaEurope has the experience, network, and capability, with its representation in Cuba and Secretariat in Switzerland, to effectively monitor the project and provide donors with regular updates.

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