Hogar Solar

Submitted By: Municipal Energy and Climate Change Agency of Hermosillo



Organization Profile

Organization Name: Municipal Energy and Climate Change Agency of Hermosillo

Organization Type: Subnational government

Website: https://www.linkedin.com/company/agencia-municipal-de-energ%C3%ADa-y-cambio-clim%C3%A1tico/posts/

Practice Details

Country(ies): Mexico

City(ies): Hermosillo

Start Year: 2022

Ongoing: Yes

End Year: N/A

Main Adequate Housing Components:



Housing Thematic Areas:

Housing Affordability & Financing

Housing & Climate Mitigation

Relevant SDGs:



UN-HABITAT

Problem & Context

Hermosillo is a city located in northwestern Mexico, characterized by its semi-desert climate. During the summer, temperatures regularly exceed 45°C and can reach up to 50°C in urban areas .These extreme conditions lead to a sharp increase in energy consumption, primarily due to the essential need for air conditioning in homes, which is vital for habitability in the region. As a result, the residential sector has become the largest energy consumer in Hermosillo, accounting for over 40% of stationary energy-related emissions. Electricity expenses represent a significant financial burden for households—particularly for large families and those in vulnerable situations. While national policies emphasize the transition to clean energy, high-consumption regions lack tax breaks or state-level incentives to promote the use of renewable energy. In response, the municipal government has taken action by providing subsidies for the installation of photovoltaic systems in residential homes.

Solution Developed

Hogar Solar is an initiative aimed at promoting the installation of photovoltaic systems in homes, with the goal of reducing electricity consumption and encouraging the use of clean energy. The program plans to install a minimum of 100 systems annually and is specifically designed to benefit large families, with dedicated spaces for single mothers, vulnerable populations, and residents of social housing. In its initial phase, the Municipality allocated 3 million of mexican pesos, offering a 15% subsidy on the total cost of each system. The remaining balance can be financed through the Municipality and repaid over three years with no interest. As beneficiaries repay their loans, the revolving fund is replenished, ensuring the program's continuity and the availability of subsidies for future participants. Each beneficiary household also receives a free basic energy efficiency assessment conducted by the Tumbawatts team, along with a subsidy for the installation of solar panels on their rooftop. If desired, beneficiaries may opt to finance the remaining cost of the photovoltaic system through interest-free installments, conveniently added to their water utility bill.

Implementation

The program began in May 2022 and is currently being implemented. All installed photovoltaic systems have technical specifications approved and authorized by the current Mexican Official Standards of the Ministry of Energy, the National Energy Saving Commission, and the Federal Electricity Commission; as well as any guidelines issued by the Trust Fund for Electric Energy Savings (FIDE), in accordance with the Mexican Official Standard NOM-001-SEDE-2012.

The solar modules, power inverters, and structures are part of the catalog of equipment authorized by the Trust Fund for Electric Energy Savings (FIDE), thereby ensuring that they have undergone testing and receive technical support from the manufacturers. The process includes: (1) application registration, (2) Tumbawatts visit, and if requirements are met, (3) supplier

assignment, (4) system installation, (5) file opening with CFE, (6) meter replacement, (7) system activation, (8) monthly repayment via the water bill, and (9) ongoing monitoring by the Energy Agency. If requirements are not met, only the energy efficiency assessment is provided. The program is led by the Hermosillo Energy Agency in coordination with private suppliers and citizen beneficiaries. Subsidies come from public funds allocated by the City Council. As loans are repaid, the resources are reinvested through a revolving fund, ensuring continuity of support for future participants.

Enablers & Obstacles

The key drivers and enablers of this program have been, without a doubt, Mayor Antonio Astiazarán, local supplier companies, and the Hermosillo Energy Agency. The Agency's staff, along with a small dedicated team, led the initial installations, leveraging the city's high solar radiation potential. The program has been widely embraced by the public and has generated economic, environmental, and social benefits. In the early stages, many applications were rejected due to non-compliance with CFE regulations and deficiencies in household electrical installations. Over time, this issue was addressed by providing citizens with diagnostic support and technical guidance. The main challenge the program currently faces is the inability to scale up to more households due to budget limitations. Additionally, maintaining affordable system costs has become difficult because of rising global material prices—particularly for components imported from China, affected by international policy shifts.

Results & Impact

The Hogar Solar program began in May 2022 and continues to operate to date. As of July 2025, a total of 505 photovoltaic systems have been installed in an equal number of homes, directly benefiting over 3,000 residents. Of these, 101 systems were allocated to priority groups such as women heads of household, retirees, people with disabilities, and elderly women. Additionally, the program supports the construction of 59 social housing units equipped with thermal insulation and solar energy systems, providing low-income families access to dignified and energy-efficient housing.

The most significant impact of the program has been financial. Many families have seen a substantial reduction in their electricity bills. For example, Ruth García, a beneficiary from the first phase, reported that her summer bill decreased from 4,000 pesos to 1,100 pesos, representing a 60% savings.

From an environmental standpoint, each installed system helps mitigate approximately 0.9198 tons of CO_2 equivalent per year, contributing to Hermosillo's climate and sustainability goals.

Replication & Scale Up

Replication of the program first requires a strong commitment from local government authorities to allocate dedicated funding. From a climatic standpoint, successful implementation depends on the region having adequate solar radiation levels to ensure system efficiency. An energy agency or similar coordinating body plays a crucial role as a facilitator between suppliers and beneficiaries, streamlining processes and ensuring technical oversight. Additionally, qualified personnel are essential for system installation, energy diagnostics, performance monitoring, and payment tracking.

Allocating more funds to subsidies that allow more families to acquire the systems. Although financing and convenient interest-free payments are available for the non-subsidized amount, the subsidy amount is significant in alleviating the financial burden.

Policy Uptake

This housing practice has been fully adopted into formal policy frameworks and legislation, and is being implemented at scale with institutional support.

The Hogar Solar program has been fully integrated into formal policy frameworks and legislation. It is one of the 25 flagship programs of Hermosillo's Municipal Energy Transition Strategy, and is also aligned with the Municipal Development Plan and Mexico's National Energy Transition Strategy. The program is implemented at the municipal level, with institutional support from the Hermosillo City Council and technical coordination by the Municipal Energy and Climate Change Agency.

Lessons & Takeaways

It is essential to deepen the preliminary diagnosis to ensure the solution is complemented by energy efficiency measures and safe electrical installations. Additionally, greater public awareness is needed to dispel common myths about solar energy—particularly the misconception that having solar panels automatically leads to excessive energy consumption. Improving the installation teams will also enhance overall efficiency. To sustain the program's success and broad acceptance, rapid expansion is necessary.