

This MENARID project is a knowledge sharing and learning partnership for improved natural resource management, with Morocco, Algeria, Tunisia, Yemen, Jordan, and Iran. This briefing was produced during a special consultation of the group in March, 2013.

CARBON EMISSION DECREASE BY SOLAR WATER HEATING IN IRAN

Solar Panel heating system re-use to meet community needs

A pilot project using solar panels provides hot water to poor households in Iran at cheap cost, and avoids the use of gas cylinders that generate carbon emissions.



Project «Carbon emission decrease by solar water heating in Iran»

Source: "pictures from project managers"

Points to Consider

- A recognized and functioning governance mechanism, such as a cooperative or traditional institution, is essential to ensure the restored range is sustainably managed.
- A strong business case—financial or political—is needed to acquire the funds needed to set up the operation.
- Drivers and mechanics must be trained to use and maintain the Vallerani plow, and sources of spare parts identified or developed.
- Local communities will need to be trained in seed collection and production to support range regeneration, impact in their livelihoods, to develop alternative scenarios and to build a common purpose to restore rangelands.

In Asfij village, Yazd Province –harsh weather condition and extreme cold have prompted people from Yazd province to use fossil fuels (in the form of gas cylinders), fuel wood and rangelands bushes for water heating. This has become an issue in terms of environmental damage and financial cost. In average a family of four members would pay US\$100 per month in order to get gas cylinders used for heating water for household consumption. Heavy deforestation has also

Purpose

This summary informs decision makers and planners at national and regional levels about a potential approach to use solar panels as a clean, cheap, sustainable source of energy. Solar panels can help in organizing communities for coordinated and improved wellbeing. It is also useful for extension planners and rural development groups (NGOs).

Suitability

This project is suitable for any community wanting to avoid falling into dependence of fossil fuels and reduce energy costs. Particularly the technology is useful for communities that are in remote locations where no electricity reaches, or where there are high transportation costs of gas cylinders.

The project in numbers

- The cost of the panel installed and functioning is US\$ 800. Farmers benefiting from the project could cover the cost in as low as two months. Farmers not benefiting from the project would cover the investment in four months.
- 121 kg of carbon emission can be eluded by using the solar panels.
- The solar system benefits farmer for 10 years in average.

Partners

- Ministry of Jihad-e-Agriculture
- UNDP
- ICARDA
- Forest Range and Watershed
- Management Organization

Contact

Dr. Mehdi Farahpour
National project manager
Forest, Range and Watershed Management Organization
Tehran

Islamic republic of Iran
Tel: + 98- 21- 22 19 4039
Website: <http://www.menarid.frw.org.ir/>

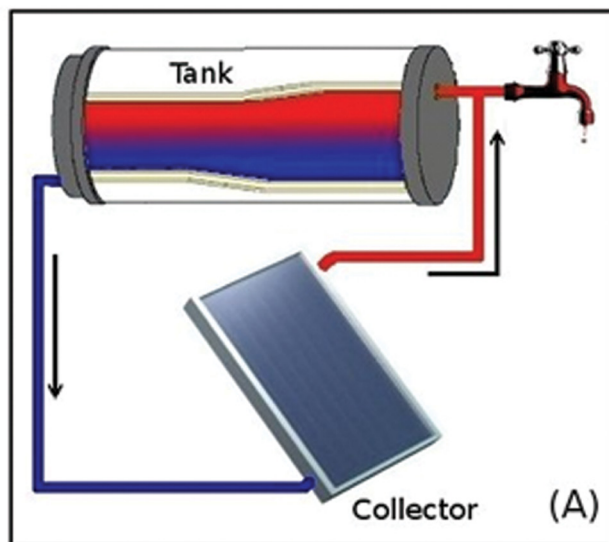
been reported in the province, though no precise figures have been obtained. The MENARID project "Institutional Strengthening and Coherence in Integrated Natural Resources Management" has been working on reducing the dependence on fossil fuels and on promoting the use of clean sources of energy. Thus an objective of the project has been reduction of pollution (CO₂ emissions) and increasing environmental awareness of concerned stakeholders.

Thus the project, in consultation with the local community and government officials, started with using solar panels mainly used to heat water. The main purpose of this panels were to reduce dependence on fossil fuels, increase welfare of households, reduce costs of energy, raise environmental awareness, and implement a replicable model for community-based managed of sustainable and efficient energy system. An unexpected benefit from the project has been reducing the burden of transportation and carrying heavy gas tanks, difficult for the elder and children that are the ones frequently remain in remote communities (the youth migrate to cities in search of better economic opportunities).

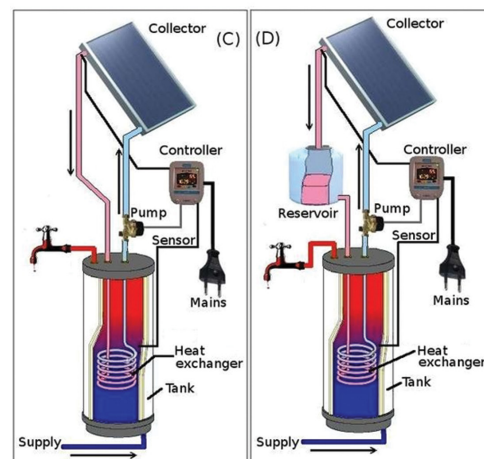
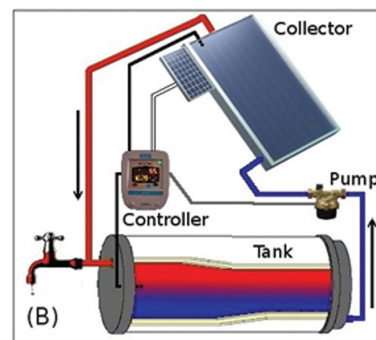
In Asfij village, the project had installed, in agreement with village members, 24 solar panels for individual households. The cost of installation for each solar panel was in average US\$ 800 per household. The project agreed with a private company to install the panels and to provide training to two members of the community to repair and maintain the panels. The panels were accepted by villagers for two main reasons: the money they could save by investing in the panels, and the weight of the gas tanks. In addition, the project devised a micro credit fund (named 'Village Development Fund'), under which community members became members by depositing small amounts of money, which in turn entitles them to get relatively large amounts of credit used to cover the cost of the panels.

How the solar panel system works

Solar panel systems are installed in roofs. These collect heat from the sun and then heat up water stored in water tanks. A boiler or immersion heater can be used as a backup to heat the water further to reach the temperature needed.

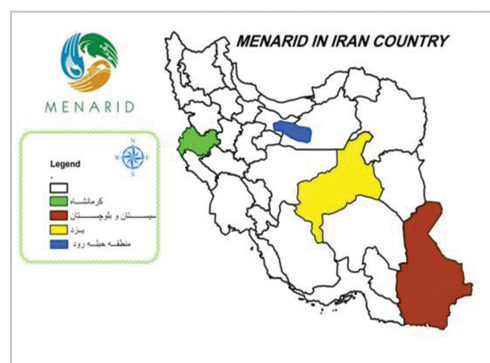


Source: "Wikipedia"



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Preventing from carbon emission can be achieved by replacing gas cylinders by solar panels. Surrounding villages have asked the project to help in the installation of solar panels in their households. The local authorities are considering installing 4,000 solar panels in the province following the model devised by the project.



www.menarid.icarda.org

Contact:

Hugo Remaury
Project Coordinator at ICARDA
Email: h.remaury@cgiar.org
Office: (00962) 5903120
Mobile: (00962) 0796260019

