Tularù: investing in the energy transition of mountain farms

Tularù is an organic and diversified 60 ha farm located in Rieti, in the mountainous Region of Lazio (Italy). The farm is committed to sustainable development and the environmental strand of its action includes the use of renewable energies. The combination of solar, thermal and biomass resources cover most of the energy needs of the Tularù farm.

3 pillars of sustainability

Tularù is a multifunctional farm established since 2017 and counting 30 ha of woodlands and 30 ha of land dedicated to the production of ancient cereals, vegetables, fruit and wild fruit and breeding of cattle and chickens exclusively fed through grazing. Farmers also propose agritourism experiences and run an on-farm restaurant. Tularù is committed to the principles of sustainable development. To enhance the socio-economic sustainability of the farm, farmers contribute to structuring the local value chain of old grain varieties, reinvest into local projects and include local communities in social integration projects and leisure activities.

MORE INFO

The use of local varieties, the collection and use of rainwater and the practice of rotating grazing, increasing the carbon sequestration capacity of grasslands, are also promoted as steps towards environmental sustainability.

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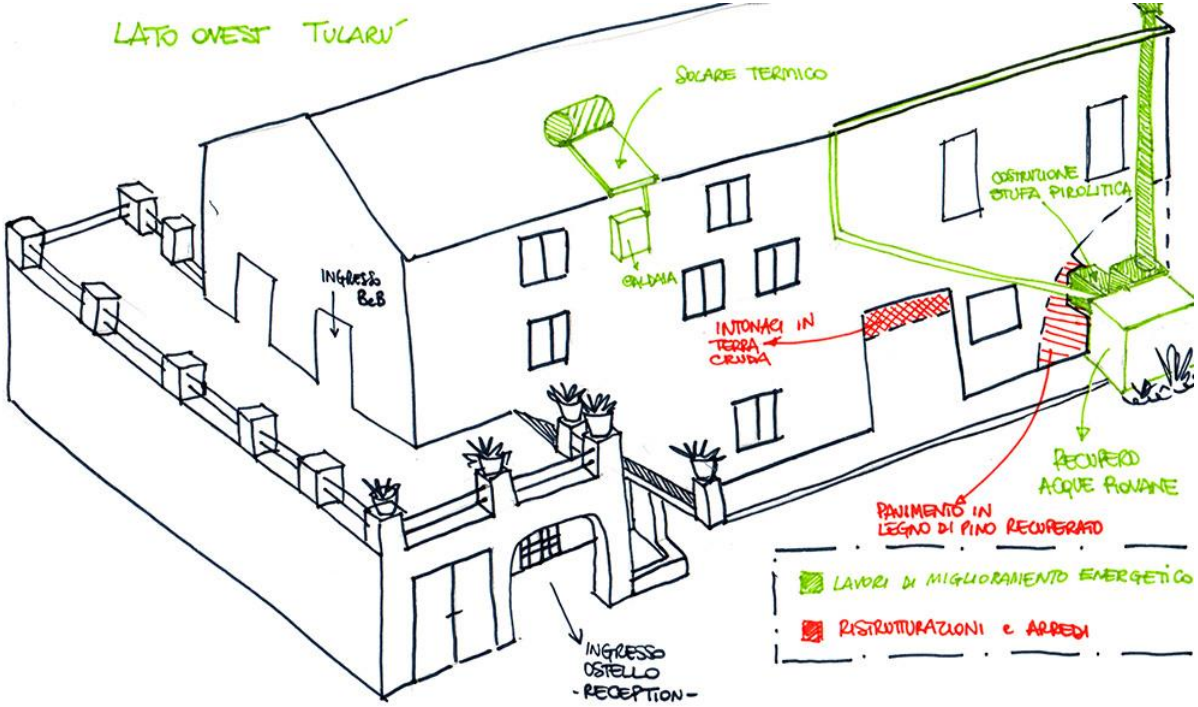
On farm closed loop sustainable energies

To make further progress on environmental sustainability, farmers decided to opt for renewable energies to reduce their carbon emissions. All the system is in closed loop and allows the farm to do self-consumption and therefore to also reduce its energy expenses.

Hot water is produced through two renewable sources: solar panels and thermo-compost:

- Photovoltaic panels of 6 kw in energy exchange were installed on the farm's roof with east-west exposure to take advantage of the sunlight during all day.
- The farm also uses thermal composting techniques. Through a system of about 30m³, wood chips, pruning waste and cuttings from hedge and forest clearing are transformed into energy. Producing energy through compost is always a challenge because the humidity rate must always range between 60% and 75% for the waste to decompose properly – otherwise, excessive humidity affects bacteria. Therefore, balanced rainwater inputs and good draining base are essential. The energy produced by the thermal compost heats part of the farm's water. The compost is also used as natural fertiliser on crops to improve their growth and enrich the soil.



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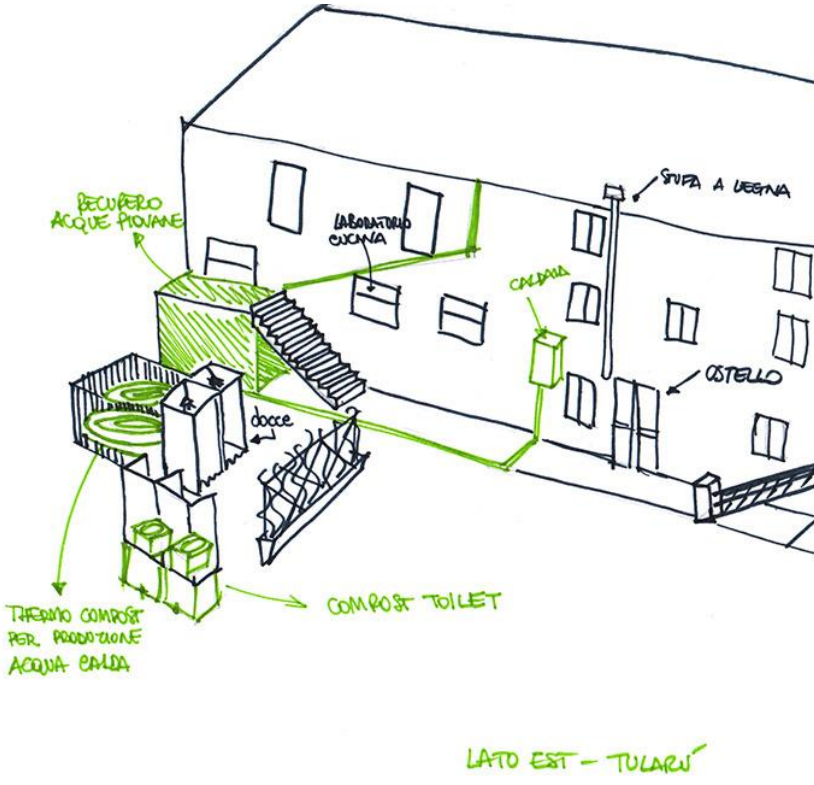
To store the energy produced by these two sources, the farm was equipped with a 800 litter and a 600 litter boilers which stock domestic hot water, powered by photovoltaic panels. Boiler are supplied with rainwater.

Moreover, an inverted flame wood stove of 35 kw was installed to heat the place. Conventional wood stoves light the fire from the bottom to the up, generating smoke containing fine particles. On the contrary, inverted flame wood stoves enable to light the fire on the top of fire logs. In this way, the gas formed by the combustion burns completely instead of being disperse in the smoke.

The different energy installations can cover most of the farm's energy needs. The different systems take advantage of the various renewable resources of the mountain, such as solar and wood, and, in a logic of circularity, also make use of organic waste.



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Resources

The sustainable energy installations were funded by different resources. For the installation of solar panels, farmers received € 10,000 from the Rural Development Programme of the Lazio Region 2014-2020. The support was granted under the measure 6.1 of the region's Rural Development Programme, which aimed at supporting the business development of young farmers.

Regarding the thermal installation, € 18,000 were financed by "Conto Energia 2.0", an Italian scheme supporting energy efficiency and promoting the use of thermal energy. In addition, € 6,000 of own capital were also invested by farmers for the thermal system.

Apart from the investments in energy transition, Tularù receives additional support from Rural Development Programmes, such as payments for areas with natural constraints and payments for organic production.

Innovative aspect

Tularù demonstrates that farms have an important role to play in the transition towards sustainable energies and that mountains' natural resources offer many opportunities. Photovoltaic installations on existing buildings are a promising cost-effective and productive source of energy in the mountains but a balanced energy mixed, that includes waste and circularity, is key for mountain farms.

For more information, please contact:
Blandine Camus, Communication & Policy Officer
communication@euromontana.org
+32 2 280 42 83
www.euromontana.org