

Solar Cold Store

The challenge: Farmers in rural areas often lack the facilities required to store their produce. This is true of shorter-term storage, to preserve freshness, or longer-term storage for example of root crops or seed potatoes required for next year's harvest. The absence of cold storage means that farmers either have to sell immediately after harvest, suffer heavy post-harvest losses or must transport their produce to find cold storage elsewhere.

The solution: A solar cold store can provide a reliable short- and long-term storage solution for local farmers, even in off-grid locations. A cool storage space aids in the preservation of perishable goods like fruits, vegetables, or fish.

The technology: A solar cold store uses energy from the sun to power a refrigeration system. Solar panels generate the necessary electricity for the cooling process, and insulation protects the cold store from fluctuations in the outside temperature. It also helps to keep the temperature inside the cold room low during the night when solar power is not being generated. Systems often include battery storage to provide power backup during cloudy periods to keep the temperature stable.

Illustrative output: a 5 metric tons modular cold store (dimension 10*10*10 feet) requires a 5 kilowatt-peak (kWp) solar power system.

Lifespan? @15 years.

Why choose a solar cold store?

- ✓ Efficient, effective and environmentally friendly option.
- ✓ By reducing reliance on grid electricity or diesel generators, solar cold stores offer a sustainable and cost-effective way to extend the shelf life of produce, benefiting farmers, businesses, and supply chains.
- ✓ Little or no maintenance is required.
- ✓ No operating costs.

