

Reliable Cooling, Powered by the Sun

Food self-sufficiency is a national priority in Indonesia, with a strong focus on increasing domestic production and improving how food is stored and distributed. Reliable cold-chain infrastructure can help reduce losses, maintain product quality and strengthen domestic supply chains, especially in agriculture sector. Solar-powered cold storage can support these efforts while also increasing the use of clean energy.



Strengthening Cold Chains for Food Self-Sufficiency



23–48 million
tonnes of **food are
lost** each year*



61–125 million people
could potentially be fed by
the amount of food lost*



Supporting domestic production
Reliable cold storage helps
preserve locally produced food
and reduce losses along the
supply chain.



Closer to production areas
Decentralised cold storage
can improve storage and
distribution of perishable
products

*Source: Kementerian PPN/Bappenas, Food Loss and Waste in Indonesia Study, 2021 (data period: 2000–2019).

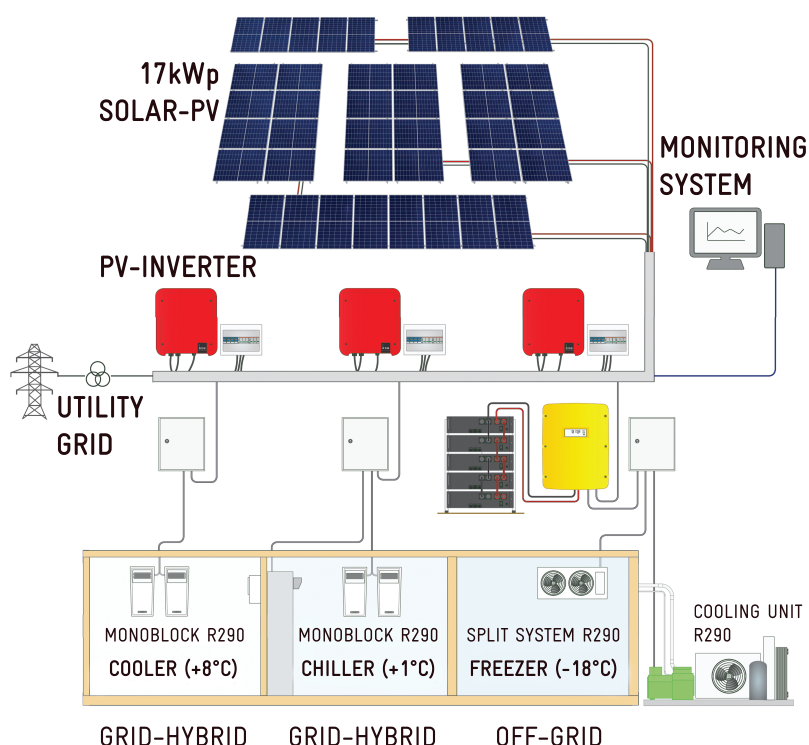
Technology Innovation



Tri-Chamber Solar PV Cold Storage

The Tri-Chamber Solar PV Cold Storage is designed to store different products under their required temperature conditions within a single facility, combining solar PV energy and refrigeration.

The system can operate fully off-grid using solar PV and battery storage system (BESS), or in hybrid mode with the national grid (PLN). This flexible configuration allows the technology to be deployed in remote areas, including locations where only single-phase electricity is available, while reducing dependence on the grid and improving energy resilience.



Key Features

One
system

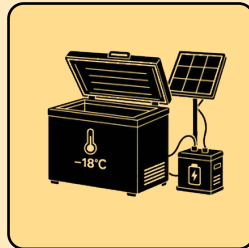
3 temperature
zones

Flexible
power

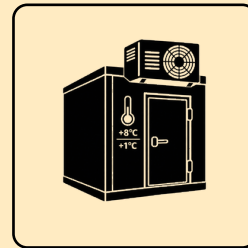
Climate-friendly



Solar-powered
cooling



-18°C freezer:
Fully off-grid



+1°C & +8°C chambers:
Monoblock cooling units



R290 natural
refrigerant

Benefits of Solar-Powered Cold Storage



Uses cleaner energy
Solar power can
reduce reliance on
conventional or
diesel-based energy.



**Brings cooling closer
to production**
Provides cold storage
closer to where
products are produced
and handled.



**Improves access to
reliable cooling**
Useful in areas / the
first mile where
electricity supply is
limited or unreliable.



**Reduces losses and
maintains quality**
Keeps perishable products
fresh for longer.



**Supports producers and
supply chains**
Helps preserve product
quality and value throughout
the supply chain.

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