

Solar Cold Storage

This system enables farm level cooling for perishable commodities in locations with weak grid availability. The solar energy is stored in Thermal storage system (TSS) for cooling during non-solar hours. The system automatically switches over to grid electricity if TSS is depleted below a minimum level. This system is also available without solar photovoltaics to eliminate the need of diesel generators during grid outages.

The cold storage retains the quality of fruits, vegetables, flowers, egg, fish, meat and other perishable commodities for a longer duration. It improves farmer income by aggregation, reducing spoilage, avoiding glut periods and reducing transport bottlenecks during peak period of production.

The system also support other applications such as fruit ripening, vaccine/medicine storage, etc.

The solar integration is jointly developed in partnership with National Institute of Solar Energy, Government of India.



Features

HIGH COOLING BACKUP

Class leading energy storage provides up to 2 days of cooling autonomy

FAST COOLING RATES

Patented cooling technology achieves target temperature in lowest possible duration than any competition

5 to 100 MT CAPACITY

Flexible design in both container and indoor cold room options

LOW OPEX

Minimal recurring cost of grid electricity & diesel generators

Standard Specifications

Model	5 MT	8 MT	10 MT
External body	20 feet x 8 feet x 10 feet	28 feet x 8 feet x 10 feet	40 feet x 8 feet x 10 feet
Internal storage volume	750 cubic feet	1,200 cubic feet	1,500 cubic feet
Temperature range	0 - 20 °C	0 - 20 °C	0 - 20 °C
Cooling backup capacity	200 MJ	200 MJ	400 MJ
Compressor	3.6 TR	3.6 TR	7.2 TR
Solar photovoltaic panels	7 kWp	8 kWp	14 kWp
Multiple chamber options	1 & 2	1, 2 & 3	1, 2, 3 & 4
Pre-cooling capacity on Solar	1,250 kg/day	1,250 kg/day	2,500 kg/day
Pre-cooling capacity on Solar + Grid	2,500 kg/day	2,500 kg/day	5,000 kg/day

Notes:

1. All performance data is based on 5 kWh/m²-day of global solar horizontal irradiance and standard operating conditions
2. Cold storage capacity is indicative and commodity dependent
3. Pre-cooling is removing field heat from freshly harvested produce – assumed to be from 30 °C to 5 °C
4. Alternate power supply such as grid backup is strongly recommended for system operations during cloudy conditions
5. Temperature range of 0 – 4 °C is on request and temperature range of 4 – 20 °C is the standard offering

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