

## Case Study

# Madurai Aavin Dairy saves approximately ₹5 million/year with HMX's solar thermal solution!

### Background

The largest dairy in Madurai, Tamil Nadu, popularly known as “Madurai Aavin”, operates a large milk processing facility with a capacity of 1.5 lakh liters per day.

### Challenges

A critical process in milk production – pasteurization – requires that the milk is heated between 78 °C to 84 °C. This safely destroys harmful microorganism. However pasteurization at Aavin was consuming approximately 107 tonnes of furnace oil annually emitting around 335 tonnes of CO<sub>2</sub>. While this energy-intensive heating is inevitable for safety, the management of the dairy was looking for an alternative, sustainable and cost-effective solution.

### Solution

Madurai Aavin was keenly looking for a long-term solution to this continuous financial burden that could also ease the environmental impact. After evaluating the requirements in detail, HMX proposed the use of its Compound Parabolic Concentrator (CPC) as the solution. CPC is ideal for large-scale medium-temperature hot water applications in a variety of industrial sectors.

HMX installed 330 CPC modules at Madurai Aavin along with a hot water storage tank. This system has the capability to supply average 20 KL of hot water per hour at specified pasteurization temperature. The entire system is designed for reliable and automated operation. Furthermore, an IoT solution is also provided to monitor the performance of the system remotely from anywhere at any time.

### Result

With this installation, Madurai Aavin has experienced a host of benefits:

- Saved more than 95 tonnes of furnace oil yearly
- Slash their operational cost by approx. ₹5 million/year
- Reduce CO<sub>2</sub> emission by more than 300 tonnes/year

The dairy thus has many reasons to be extremely happy with its decision to embrace renewable energy and thus make a meaningful contribution towards environmental protection! The system has not only paid back for itself but is now saving money and reducing CO<sub>2</sub> emissions year after year.



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