

CHEAP HEAT

Making clean energy too cheap to meter.

Heat. Electricity. Fuels.

Civilization is built on energy.

The cost of energy determines the cost of everything downstream — food, construction, manufacturing, mining, chemicals, transportation, and ultimately the standard of living available to humanity.

I believe the fastest path to abundant clean energy isn't generating cheaper electricity. It's generating cheaper **heat**.

The Problem

Industrial heat accounts for **~25% of global final energy demand**, and **more than 90%** of it is still supplied by fossil fuels.

Yet most industrial processes don't require electricity — they require **heat**.

Industry	0°C	150°C	400°C
Chemicals	Boiling, drying	Distilling	
Food and beverage	Boiling, drying, pasteurizing, washing	Frying	
Mining	Copper electrolytic refining, mineral drying	Nitrate melting	
Paper and pulp	Bleaching, drying	Wood processing	
Textiles	Bleaching, washing	Dyeing	

Today, we unnecessarily convert:

Sun → Electricity → Heat

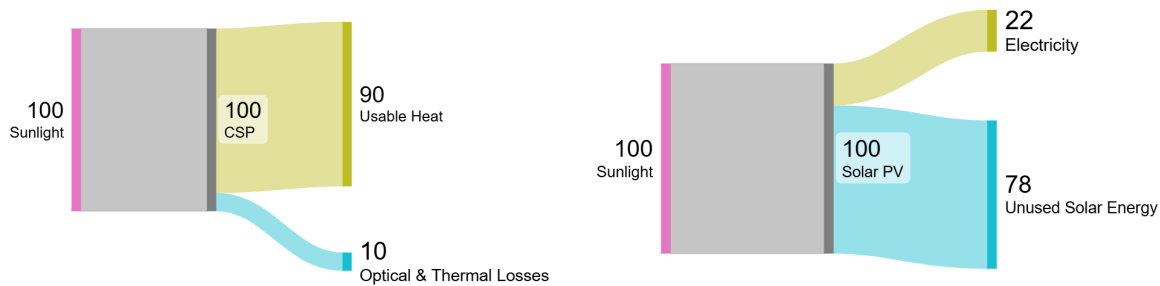
adding expensive conversion losses, batteries, and electrical infrastructure.

Heat should never have become an electrical problem.

Thesis

The two best sources of energy — the sun and nuclear reactors — are fundamentally **heat sources**.

Instead of converting heat into electricity and then often back into heat, I believe the future energy stack should use heat directly, whenever possible.



Optically concentrated solar thermal can capture **up to ~90% of incident solar energy** — roughly **4× the usable energy density** of conventional solar PV over the same collector footprint.

Heat can then be:

- used directly,
- stored in inexpensive thermal batteries,
- dispatched on demand,
- or converted into electricity only when electricity is actually needed.

This makes thermal energy storage fundamentally cheaper than electrical storage.

The Platform



Modular Concentrated Solar Thermal

Every module integrates:

- Hexagonal Fresnel concentrator
- Dual-axis solar tracking
- High-temperature receiver
- Integrated thermal battery
- Modular thermal output

Initial Module

Specification	Value
Thermal Output	15 kW_{th}
Collector Area	18.2 m²
Base Footprint	2.6 m²
Thermal Storage	30 kWh_{th}
Target Cost	< ₹6 lakh

Manufactured entirely from:

- steel
- aluminium
- glass
- graphite
- insulation

No lithium.

No cobalt.

No semiconductor dependency.

Designed for local manufacturing, anywhere in the world.

Why Thermal

	Solar PV + Batteries	Modular CSP
Delivered output	15 kW electric	15 kW thermal
Storage	30 kWh battery	30 kWh thermal battery
Installed cost	₹12–15 lakh	Target: < ₹6 lakh

Lower cost.

Longer lifetime.

No critical minerals.

No battery degradation.

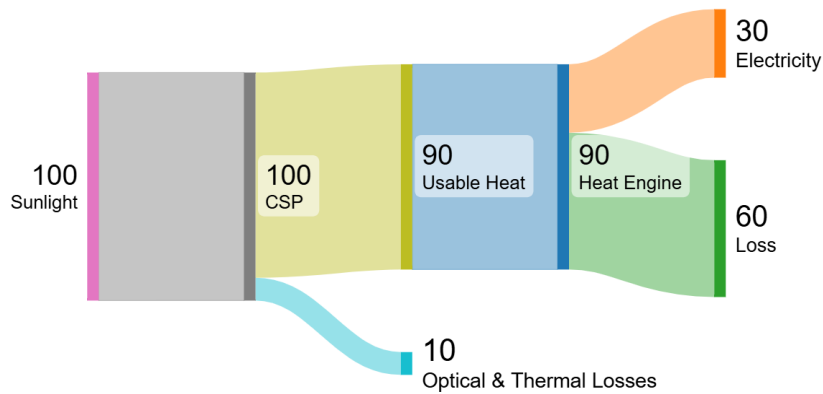
Roadmap

Phase I · Industrial Heat (2026–2027)

Deploy modular thermal systems for industries requiring **100–900°C** process heat — the largest immediate opportunity to displace fossil fuels while hitting compelling economics today.

Phase II · Dispatchable Solar Electricity (2027)

Pair modular collectors with larger thermal batteries and heat engines to deliver **24/7 dispatchable electricity** at a lower cost than solar PV + battery energy storage.



Phase III · Green Fuels & Chemicals (2028)

Cheap heat unlocks the economics of thermochemical manufacturing.

The three molecules that matter most:

- **Methane** — Sabatier reaction: $\text{CO}_2 + 4\text{H}_2 \rightarrow \text{CH}_4 + 2\text{H}_2\text{O}$ (*heat-driven*)
- **Ammonia** — Haber-Bosch process: $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$ (*heat-driven*)
- **Hydrogen** — metal chloride thermochemical cycles (*heat-driven*)

The chemistry was never the problem.

Until now, these processes have been driven by solar PV electricity — which bottlenecks the cost reduction needed for inevitable adoption.

Phase IV · Infrastructure for Small Nuclear (2029+)

If small modular reactor startups reach commercial maturity, we'll already have the best process for turning that heat into green fuels.

If they don't, our expertise in systems engineering and manufacturing infrastructure puts us in the best position to build both the reactors and the cheapest green fuels — ourselves.
