

CSP ENERGY SYSTEMS PRIVATE LIMITED

Turning Concentrated Sunlight into Industrial Thermal Power

Manufacturing Modular Concentrated Solar Thermal Energy Systems for Industrial,
Agricultural and Commercial Applications

Incorporation
December, 2025



OUR MISSION & VISION

MISSION

We **design and develop modular CSP systems** that convert concentrated sunlight into usable heat, hot air, hot water, steam, cooling and electricity while integrating with existing customer infrastructure and supporting energy-efficient operations.



VISION

We envision **making concentrated solar thermal energy** a practical and accessible source of process heat across industries, agriculture and commercial infrastructure, reducing dependence on conventional energy through efficient, application-driven CSP systems.

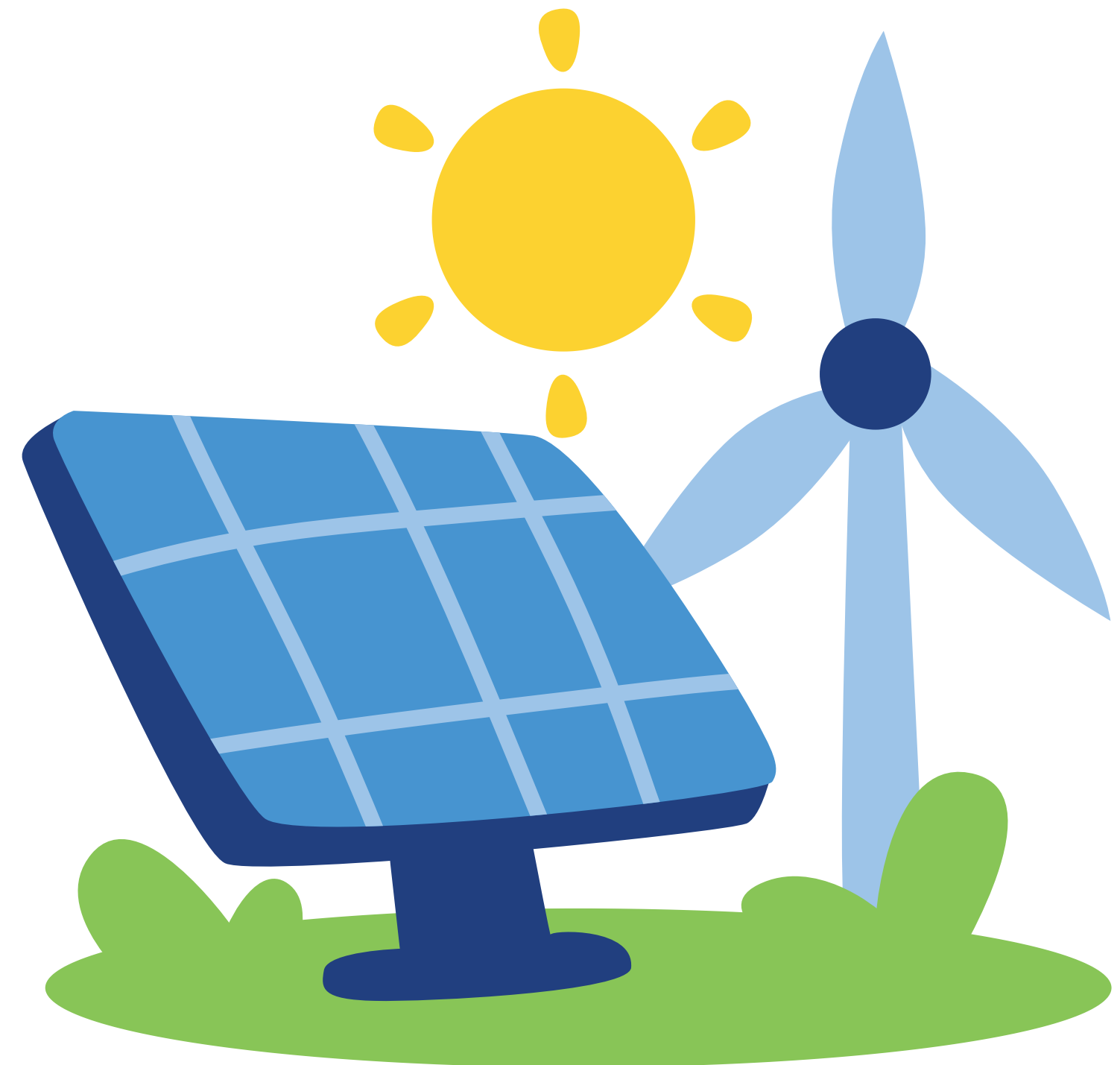


ABOUT US

CSP Energy Systems Private Limited is a **renewable-energy technology company** developing **concentrated solar thermal systems** for **industrial, agricultural and commercial applications**. We combine square parabolic dish concentrators, dual-axis tracking, thermal-energy storage, automation and application-specific skids to convert solar radiation into useful thermal energy. Our systems are being **designed to integrate with existing boilers, dryers, hot-water plants, cooling systems and power-generation applications**.

KEY ACTIVITIES

- Design and manufacturing of square parabolic solar concentrators
- Development of CSP-based thermal-energy skids
- Thermal-energy storage system development
- Industrial process integration and automation
- Agriculture-focused solar drying solutions





PROBLEM STATEMENT



- **High Thermal-Energy Dependence**
Industries require significant energy for heating, drying, steam and hot-water processes.
- **Electricity Is Not Always the Right Energy Form**
Many processes require heat directly, making electricity-to-heat conversion an additional step.
- **Large-System Adoption Barrier**
Traditional CSP projects can require complex, large-scale infrastructure.
- **Agricultural Drying Needs**
Agricultural produce requires reliable drying for processing and storage.
- **Limited Thermal Storage Adoption**
Industries need practical ways to store renewable thermal energy for later use.

PROPOSED SOLUTIONS

01

Direct Solar-to-Heat Conversion

We convert concentrated sunlight directly into usable thermal energy.

02

Modular Deployment

We develop CSP skids according to customer capacity, temperature and application needs.

03

Existing-System Integration

We integrate with existing boilers, dryers, hot-water and process equipment.

04

Multiple Energy Applications

We support drying, hot water, steam, cooling, storage and electricity generation.

05

Stored Solar Thermal Energy

We provide systems with or without thermal-energy storage.



WHY CHOOSE US?

One Platform, Multiple Applications

We use one CSP technology platform across several thermal applications.

01

Skid-Based Architecture

We develop modular, application-specific CSP skids instead of only large systems.

02

Flexible Energy Storage

We offer both storage and direct-use configurations.

05

Automation Expertise

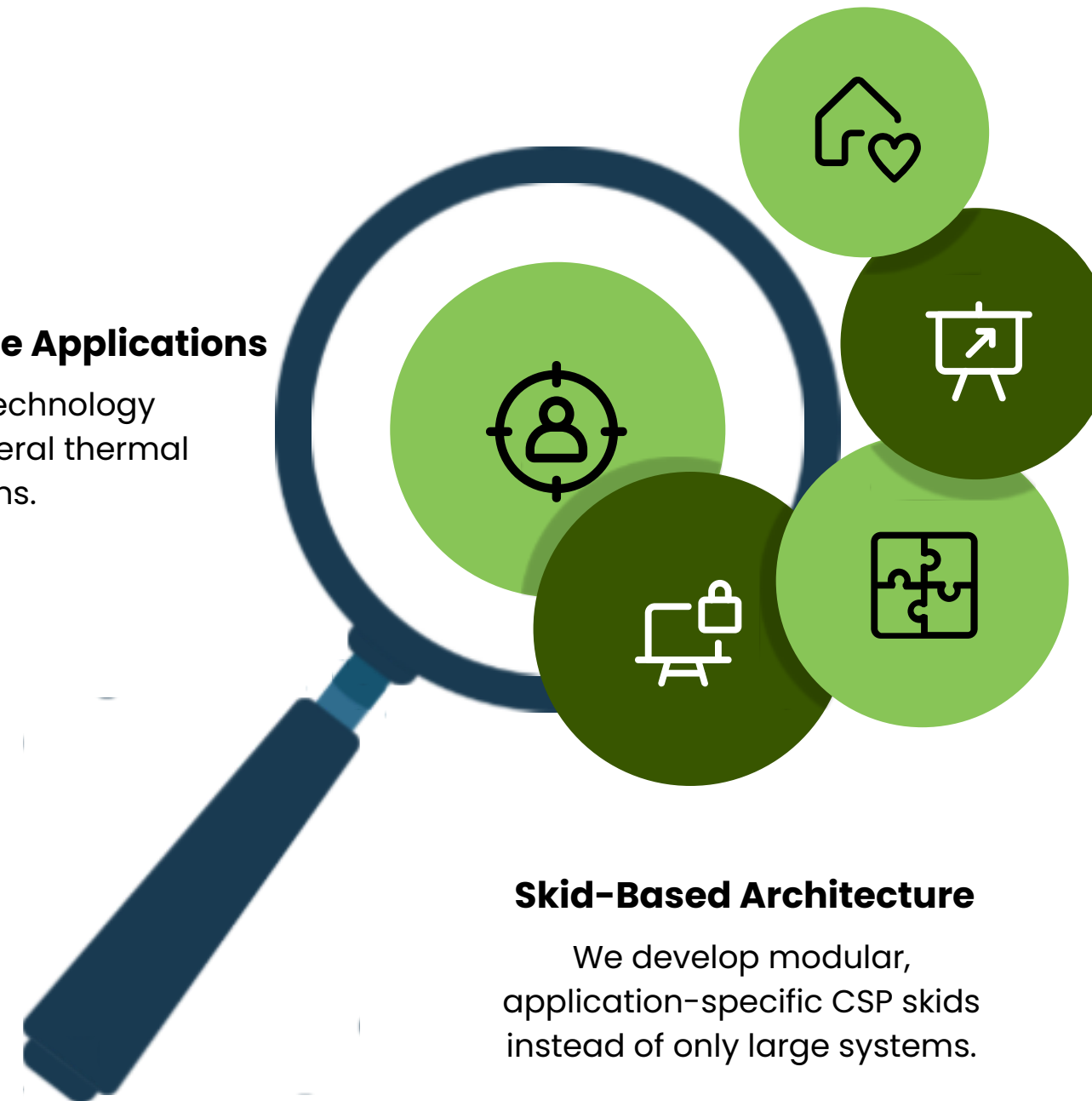
Our instrumentation and automation experience strengthens system control and integration.

04

Retrofit Capability

We integrate CSP with existing thermal equipment.

03

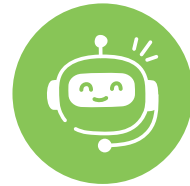


OUR INNOVATIONS



Square Parabolic Dish Architecture

We use a square parabolic reflecting dish to focus solar radiation onto a receiver.



Dual-Axis Solar Tracking

Our 5-metre concentrator tracks the sun with approximately 0.1° sun-lock accuracy.



Slew-Drive Tracking Mechanism

We use a slew drive for reliable and precise concentrator movement.



High Solar Concentration

Our reflector is designed to concentrate solar radiation at approximately 1000X magnification.



Application-Led Engineering

We convert thermal energy into usable outputs through fluids, heat exchangers, storage and modular skids.

HOW OUR TECHNOLOGY WORKS

01 | Capture



We use the square parabolic reflector to collect incoming solar radiation across the dish surface.

02 | Concentrate



We focus reflected solar radiation onto a receiver positioned at the focal point of the concentrator.

03 | Transfer



We circulate thermal fluid through the receiver, where concentrated solar energy increases the fluid temperature.

04 | Store or Deliver



We either transfer the generated heat directly to the application or retain it through our thermal-energy storage architecture.

05 | Utilise



We deliver thermal energy through heat exchangers to dryers, hot-water systems, boilers, chillers or thermal-to-electricity systems.

OUR CORE OFFERINGS

CSP Thermal Energy Storage:

We store concentrated solar heat for extended utilisation.



CSP Drying Systems:

We provide hot-air and agricultural drying equipment.



CSP Heating Systems:

We develop hot-water systems and steam boilers.



CSP Cooling Systems:

We are developing CSP-powered chiller systems.



CSP Power Generation:

We are developing thermal-to-electric power systems.



TARGET AUDIENCE

01

Process Industries

Chemical, pharmaceutical, petrochemical and manufacturing companies.

02

Food & Agriculture

Farmers, processors and food businesses requiring drying solutions.

03

Industrial Utilities

Businesses using boilers, dryers and thermal-processing systems.

04

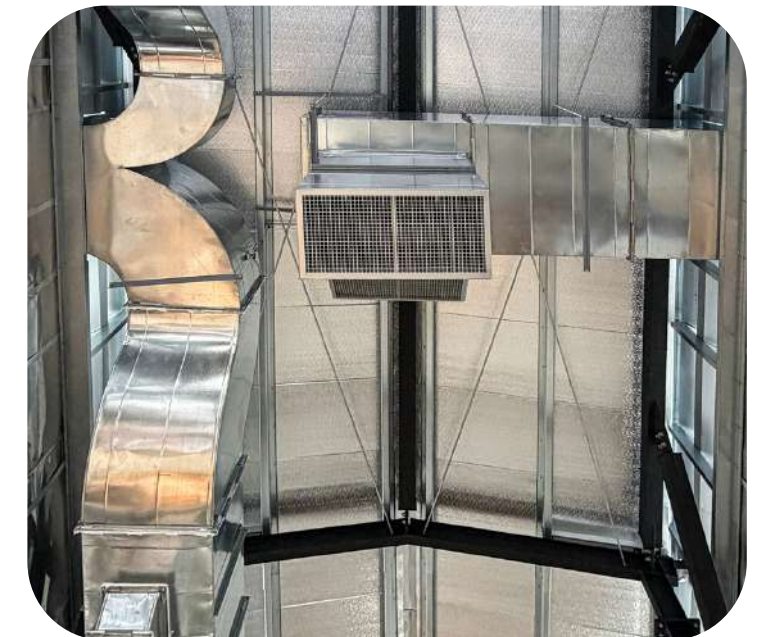
Commercial Infrastructure

Facilities requiring hot water, cooling or thermal energy.

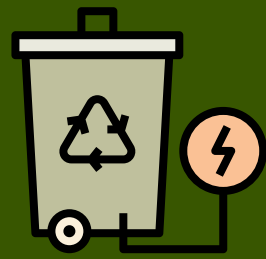
05

Distributed Energy Users

Customers seeking customised renewable thermal-energy systems.



MARKET STRATEGY



01

Industrial Retrofit Entry

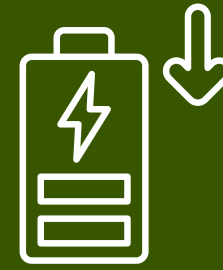
We target facilities already operating boilers, dryers and thermal equipment.



02

Application-First Selling

We focus on customer outcomes such as drying, steam and process heat.



03

Modular Customer Adoption

We offer capacity based on customer-specific requirements.



04

Existing Industrial Network

We leverage experience across automation, chemical, pharmaceutical and petrochemical sectors.



05

Demonstration-Led Expansion

We use successful installations as reference projects for wider replication.

MARKET SIZE — CSP ENERGY SYSTEMS

For this business, the **India Solar Thermal Systems Market** is the closest market benchmark because the company focuses on concentrated solar heat, thermal storage, hot water, steam, drying and other thermal applications.

Market Indicator	Market Size	Period	Relevance to CSP Energy Systems	Source
India Solar Thermal Systems Market	USD 11.9 Billion	2031	Closest addressable market covering solar heating, industrial process heat, thermal storage and concentrator technologies	Mobility Foresights
India Solar Energy Market	USD 14 Billion	2031	Broader Indian solar market covering solar technologies, including solar thermal and concentrators	TechSci Research
Global Concentrated Solar Power Market	16.25 GW	2031	Direct global technology market for CSP systems	Mordor Intelligence
Global Concentrating Solar Power Market	USD 24 Billion	2031	Global revenue opportunity for concentrated solar power technologies	IMIR Market Research

TRACTION & ACHIEVEMENTS

- 1

Company Established
We started CSP Energy Systems Private Limited in 2025.
- 3

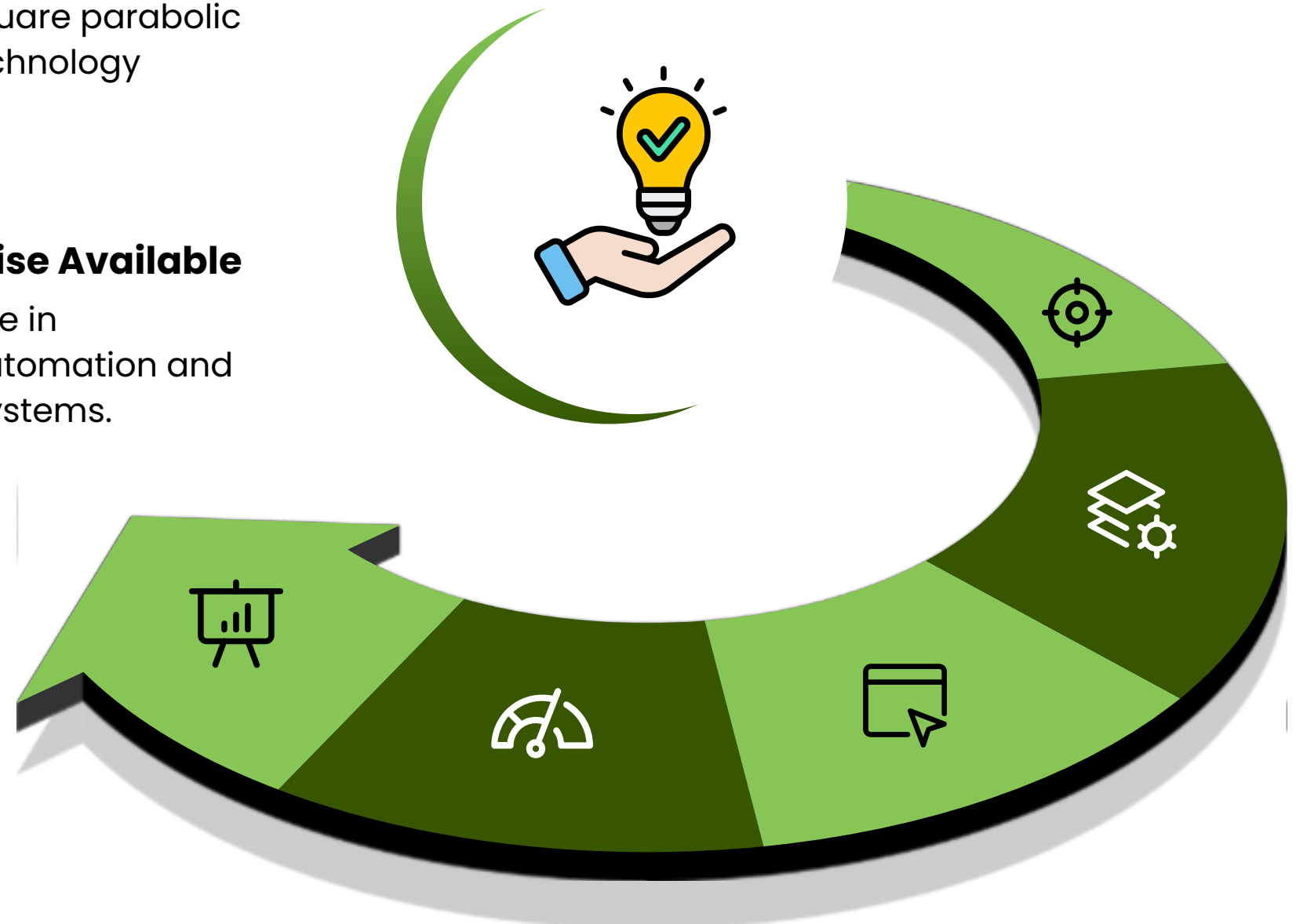
Product Roadmap Built
We identified six CSP categories across storage, drying, heating, steam, cooling and electricity.
- 5

Development Phase Underway
We are progressing the concentrator and related systems toward demonstration and deployment.

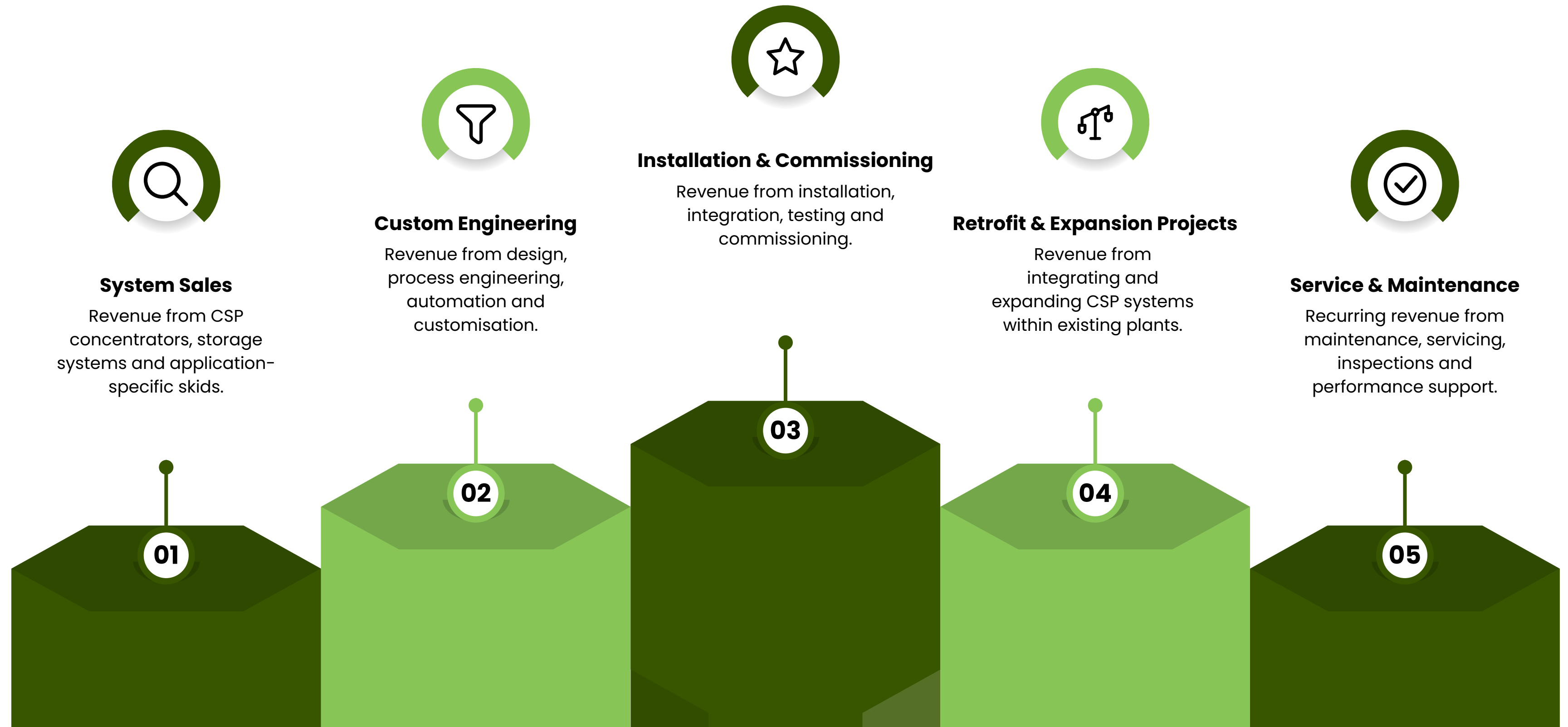
- 2

Core Technology Identified
We selected the square parabolic dish as our core technology platform.
- 4

Industrial Expertise Available
We bring experience in instrumentation, automation and industrial control systems.



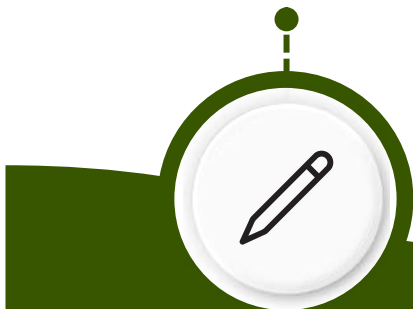
BUSINESS & REVENUE MODEL



SCALE UP STRATEGY

Phase 1 | Build & Demonstrate

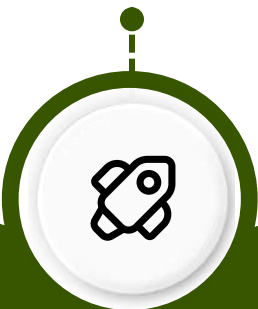
We will complete and demonstrate the core concentrator and initial skids.



01

Phase 3 | Standardise Products

We will create repeatable skid configurations for key applications.



03

Phase 5 | Multi-Sector Expansion

We will scale across agriculture, pharma, chemicals, petrochemicals, manufacturing and commercial sectors.



05

Phase 2 | Pilot Deployments

We will validate performance through selected industrial and agricultural pilots.



02

Phase 4 | Expand Manufacturing

We will strengthen fabrication, assembly, automation and supply capabilities.



04

WHY CSP ENERGY SYSTEMS?



Heat-Focused Energy Platform

We address applications where thermal energy is the primary requirement.



Built for Integration

We design CSP systems to complement existing industrial infrastructure.



Modular by Design

Our skid-based model adapts to different capacities and applications.



Multi-Product Scalability

One technology platform supports multiple products and sectors.



Technical Execution Capability

Our automation and control expertise supports integrated system development.

COMPETITIVE ANALYSIS

Key Parameter	CSP Energy Systems	Clique Solar	Megawatt Solutions	Oorja Energy	Sunrise CSP India	Taylormade Renewables
Concentrated Solar Thermal Technology	✓	✓	✓	✓	✓	✓
Parabolic / Dish Concentrator Platform	✓	✓	✓	✓	✓	✓
Dual-Axis Tracking Architecture	✓	✓	✗	✗	✗*	✗
Thermal Energy Storage Integration	✓	✓	✗	✗	✓	✗
Industrial Process-Heat Applications	✓	✓	✓	✓	✓	✓
Solar Steam / Boiler Applications	✓	✓	✓	✓	✓	✓
Solar Hot-Water Applications	✓	✓	✓	✓	✓	✓
CSP-Based Cooling / Chiller Application	✓	✓	✗	✓	✓	✓
Dedicated Agricultural / Hot-Air Drying	✓	✗	✓	✗	✗	✓
Thermal-to-Electric Power Generation	✓	✗	✗	✗	✓	✗
Multiple Applications from One CSP Platform	✓	✓	✓	✓	✓	✓
Storage & Non-Storage Product Configurations	✓	✗	✗	✗	✗	✗

THE LEADERSHIP



CHENNA GANDHI VADDI

INDIA

50% SHAREHOLDING

Postgraduate in Instrumentation with experience in automation, instrumentation and control systems, contributing technical expertise in system integration and process optimisation.



SRIVANI VADDI

INDIA

50% SHAREHOLDING

MCA-qualified professional with expertise in software applications, digital systems and technology implementation, contributing to product development and operational efficiency.



The Future of Industrial Energy Is Not Only Electric — **It Is Thermal**

We are **building a modular concentrated solar thermal platform** capable of powering the processes that industries and agriculture **use every day—from drying and hot water to steam, cooling and electricity.**

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