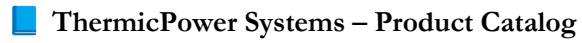


2025

ThermicPower Systems – Product Catalog



ThermicPower Systems, A Division
SmartEnergi Corp
5/10/2025



Hybrid Heat Input Electricity Solutions

A Division of SmartEnergi Corp

Powering Efficiency. Capturing Value.

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1. Company Overview

ThermicPower Systems, a division of **SmartEnergi Corp**, specializes in generating electricity by delivering hybrid energy solutions designed to maximize the value of waste heat and renewable energy in industrial settings. Our systems are engineered to convert low- and medium-temperature heat into clean electricity **using heat engines, advanced thermal storage (ATS), and AI-assisted control technologies.**

Backed by deep expertise in thermodynamic systems and industrial applications, we help clients reduce emissions, improve energy efficiency, and meet sustainability goals with confidence.



2. Core Technologies

◆ High Temperature Heat Engine (HT-HE)

Converts thermal energy (60°C–200°C) into electricity using environmentally friendly working fluids.

◆ Low-Temperature Heat Engine (LT-HE)

Specialized for low-grade waste heat recovery and high-efficiency applications.

◆ Advanced Thermal Storage (ATS)

Enables high-density thermal energy storage.

◆ AI-Assisted Control(AI-AC)

Intelligent control that dynamically responds to load demand, pricing and weather events.

◆ Multi-Source Heat Integration

Seamlessly integrates variety of **heat sources including waste heat and GRID electricity.**



Figure 1: Representative Diagram of Solar Thermal + HT-HE + Advanced Thermal Storage + AI-AC Controller

3. Product Portfolio by Capacity Range

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Model	Series*	Capacity Range **
TP-I	Industrial Waste Heat + HT-HE + ATS + LT-HE + Process Integration + AI-AC Controller	100 kW – 1 MW (modular)
TP-C	Solar Thermal + HT-HE + ATS + AI-AC Controller	100 kW – 1 MW (modular)
TP-G	Geothermal + HT-HE + ATS + LT-HE + AI-AC Controller	100 kW – 1 MW (modular)
TP-B	Biomass + HT-HE + ATS + AI-AC + Process Integration + AI-AC Controller	100 kW – 1 MW (modular)
TP-H	Hybrid Waste Heat + Solar + Geothermal + HT-HE + ATS + AI-AC Controller	100 kW – 1 MW (modular)
TP-TOU	GRID + HT-HE + ATS + AI-AC Controller	100 kW – 1 MW (modular)

*Energy input and modules used can be customized to meet customer needs

**Modular system, scalable to 20MW

Each system includes:

- Turnkey engineering & site-specific design
- Modular architecture for space-limited deployments
- Expandable ATS capacity and battery storage options
- Electrical outputs from 480V to 11kV, grid-tied or islanded

4. Industries Served

-  Industrial manufacturing
-  Food & beverage processing
-  Chemicals & pharmaceuticals
-  Data centers & IT facilities
-  District heating & cooling networks

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-  Waste & water treatment plants
-  Federal & defense manufacturing facilities
-  Remote & off-grid energy installations

5. Operational Workflow

ThermicPower’s phased delivery ensures successful outcomes and measurable ROI.

Phase	Description	Benefit / Goal
Phase I	Feasibility studies & techno-economic assessments	Minimize upfront risk; assess technical & financial fit
Phase II	Virtual prototyping & system optimization	Reduce design errors; optimize layout & heat recovery
Phase III	Pilot installation & performance validation	Demonstrate ROI; validate performance in live conditions
Phase IV	Full-scale system deployment	Deploy operational system; deliver designed capacity & savings
Phase V	Long-term operations & AI-assisted performance management	Ensure uptime, adaptive efficiency, and predictive maintenance

6. Investment Benefits

Capacity	Energy Savings	Emissions Reduction	Avg ROI
100 kW	15–25% reduction in annual costs	Up to 250 metric tons CO ₂ /year	3–5 years
250 kW	20–30%	Up to 500 metric tons CO ₂ /year	3–5 years
500 kW	25–35%	Up to 1,000 metric tons CO ₂ /year	2–4 years
750 kW	30–40%	Up to 1,500 metric tons CO ₂ /year	2–4 years
1 MW	35–45%	Up to 2,000+ metric tons CO ₂ /year	2–3 years

✓ Additional Benefits:

- Eligibility for federal clean energy incentives
- Compliance with **Environmental, Social, and Governance (ESG)** principles and net-zero mandates
- Reduced grid reliance and better time-of-use pricing control

7. Ordering & Support

- **Custom Configuration Guide:** System designed around your heat profile and space constraints
- **Lead Times:** 6–12 months typical depending on scope
- **Pre-Installation Checklists**
- **Warranty Options:** 5–10 years
- **O&M Packages:** Remote monitoring, AI diagnostics, onsite service
- **Training & Handover:** Onsite training, SOPs, documentation

8. Contact Us

ThermicPower Systems, A Division of SmartEnergi Corp

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Appendix 1:: **Customer Intake / Enquiry Form**

 ThermicPower Systems – Customer Intake Form

Client Name: _____

Organization: _____

Email: _____

Phone: _____

Project Location: _____

Phase I: Feasibility Study & Techno-Economic Assessment

Checklist:

- Do you have an existing facility or new build project?
- Do you currently capture or discharge waste heat?
- Do you have historical energy consumption data (12+ months)?
- Are you eligible for local or federal energy efficiency incentives?

Questions:

1. What are your primary energy goals (e.g., cost savings, sustainability, resilience)?
2. What is the expected power output or energy savings target?
3. Describe the thermal sources available (temperature, flow rates, variability).
4. Are there specific regulatory or ESG goals driving this project?

Phase II: Virtual Prototyping & System Optimization

Checklist:

- Do you have accurate site layout / facility schematics?
- Can your site accommodate new thermal or electrical infrastructure?
- Do you prefer skid-mounted / containerized systems?

Questions:

1. What technical constraints should we know about (space, noise, safety)?

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2. Which utility rate structures (e.g., time-of-use pricing) apply to your facility?
3. Are there seasonal variations in your heat or energy loads?

Phase III: Pilot Installation & Performance Validation

Checklist:

- Is a designated test area or pilot deployment site available?
- Do you require third-party validation (e.g., performance guarantees)?
- Can your team provide access for sensors, monitoring, or training?

Questions:

1. What key performance indicators (KPIs) should we prioritize?
2. What timeline and budget range are allocated for pilot deployment?
3. Who will lead or oversee technical collaboration from your side?

Phase IV: Full-Scale System Deployment

Checklist:

- Have capital or financing sources been secured?
- Is internal procurement approval required for full rollout?
- Do you require phased rollout by site or region?

Questions:

1. What commissioning and interconnection standards do we need to follow?
2. Will your team require training for O&M procedures?
3. Are any branding, partner, or reporting standards relevant to this project?

Phase V: Long-Term Operations & AI-Assisted Management

Checklist:

- Do you plan to subscribe to performance monitoring services?

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- Will this project be integrated with an existing SCADA/BMS/EMS system?
- Do you require automated reporting for sustainability, compliance, or cost savings?

Questions:

1. What uptime or reliability expectations must be met (e.g., >95%)?
2. What are your internal reporting or performance review cycles?
3. Would you like to include predictive maintenance or fault diagnostics in the service plan?