



**CSMSS**

CHHATRAPATI SRAHU MAHARAJ SHIKSHAN SANSTHA'S

**CHH. SHAHU COLLEGE OF ENGINEERING**

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## Industrial Visit Report

**College Name:** CSMSS Chh Shahu College of Engineering

**Department:** Mechanical Engineering

**Industrial Visit to:** Yotuh energy Pvt Ltd. Chennai

**Date:** 14/10/2025

**Faculty In-charge:** Prof. P.B.Chaudhari

**No. of Students:** 27

### 1. Introduction

Yotuh Energy Private Limited is a clean-technology startup based in India, founded in 2022, specializing in electric refrigeration systems for mid-mile and last-mile cold-chain logistics. Their core product is an electric refrigeration unit, powered by a lithium-ion battery and independent of the vehicle's main engine, designed to equip small commercial vehicles and electric vehicles for the refrigeration of perishable

This industry visit is relevant to the curriculum because it connects topics such as electrical and electronics engineering (battery systems, control systems), mechanical engineering (refrigeration cycles, vehicle integration), and logistics/supply-chain (cold-chain systems, sustainability). It gives students exposure to modern industrial design, product development, start-up culture and applied engineering in sustainable transport/logistics..

### 2. Objectives of the Visit

- To observe and understand how a clean-tech start up designs and manufactures refrigeration systems for cold logistics.
- To study the integration of electric battery systems, control electronics and refrigeration in vehicle-based applications.
- To interact with industry professionals to learn about current challenges and opportunities in cold-chain logistics, sustainable transport and product development in the Indian context.

### 3. Schedule / Activities During Visit

| Time                | Activity / Session     | Resource Person / Guide | Remarks  |
|---------------------|------------------------|-------------------------|--|
| 12:00 PM – 12:30 PM | Welcome & Introduction | Industry Representative | Company overview, safety briefing, start-up context                      |
| 12:30PM – 1:30 PM   | Factory / Lab Tour     | Supervisor              | Tour of assembly/manufacturing/test-lab for electric refrigeration units |
| 1:30PM – 2:30 PM    | Q&A / Interaction      | Manager/CEO/CTO         | Discussion about design, controls, logistics, business model             |
| 12:30 – 01:00 PM    | Feedback & Departure   | Faculty                 | Discussion about design, controls, logistics, business model             |

### 4. Key Observations / Learning

- The company has developed a specialized electric refrigeration system that can be fitted to small commercial vehicles and EVs, addressing the gap in intra-city cold logistics.
- Significant attention is paid to battery management, adaptive control technology, modular design and independent refrigeration unit separate from the vehicle's engine. The startup setup provides insight into how product-development, prototyping, testing, and scaling operations are handled in a real engineering environment — including multi-disciplinary collaboration (Mechanical, electrical, electronics, thermal, logistics).
- The sustainability angle: replacing fuel-based refrigeration in transport with electric, reducing operational costs and environmental impact.
- Exposure to the challenges of cold-chain logistics in India: perishables, small-commercial-vehicle scale, last-mile delivery, cost pressures, reliability.
- Understanding of how start-ups operate: funds, incubators, grants (for example Yotuh raised ₹1.53 crore funding in 2024)

## 5. Student Feedback

- Students found the visit extremely helpful in visualising how classroom theories (battery systems, refrigeration cycles, and control electronics) are applied in industry.
- The interaction session clarified career pathways in clean tech, electric mobility, logistics engineering and innovation-driven manufacturing.

## 6. Photographs



Industrial visit at Yotuh energy Pvt Ltd.



Interaction during Industrial visit at Yotuh energy Pvt Ltd.



**Q & A session during Industrial visit at Yotuh energy Pvt Ltd.**

## **7. Conclusion**

The industrial visit to Yotuh Energy Private Limited was highly beneficial and timely for students. It provided a real-world perspective on engineering design, manufacturing, and the business of clean-technology for logistics. Key takeaways include:

- How electric refrigeration systems are being engineered for cold chain applications.
- The role of interdisciplinary engineering (mechanical, electrical, electronics, thermal, controls) in product development.
- The importance of sustainability, cost-efficiency and market innovation in today's industry.
- Insights into the work culture and environment of a clean-tech start-up agile, cross-functional, innovation-oriented.
- Overall, this visit has enhanced students' understanding of the industry, broadened their perspectives on career opportunities, and strengthened the link between academic learning and industrial practice.

Prof. P. B. Chaudhari

Prof. P. B. Chaudhari

Dr. R. H. Shinde

**Faculty In-charge**

**Industry Visit In-charge**

**HOD**