Direct Services to Local Industry for Improving Energy Efficiency and Clean Energy Adoption

Academic Year: 2024–2025
Institution: JSS Academy of Higher Education & Research, Mysuru, Karnataka, India

Introduction

JSS Academy of Higher Education & Research (JSS AHER) actively supports local industries, small enterprises, healthcare facilities, and community-based organisations in their transition towards **energy-efficient operations and clean energy adoption**. Through its multidisciplinary expertise in engineering, pharmacy, medical sciences, environmental health, and sustainability management, the institution provides **technical knowledge transfer, pilot demonstrations, capacity-building programmes, applied research support, and consultative guidance** to local stakeholders.

The 2024–25 academic year marked a **significant strengthening of industry-oriented sustainability services**, focusing on **waste-to-energy systems, energy monitoring, emission reduction strategies, sustainable infrastructure practices, and public–private engagement**.
These activities directly support:

- **SDG 7 – Affordable and Clean Energy**
- **SDG 9 – Industry, Innovation & Infrastructure**
- **SDG 12 – Responsible Consumption & Production**
- **SDG 13 – Climate Action**

1. Demonstration and Technical Training on Biogas-Based Energy Systems

Campus biogas plants as living laboratories:

- **200 kg/day biogas unit at JSS Medical Institutions**
- **50 kg/day biogas unit at JSS College of Pharmacy, Mysuru**
- Average energy output of **20–25 kWh/day**

These units were actively used in 2024–25 as **demonstration models for local industries, hotels, hostels, piggeries, farms, and waste generators**.
Services to local industry:

- On-site demonstrations of **waste-to-energy conversion**
- Guidance on:
    - Feedstock management
    - Digester design
    - Gas storage and safety systems
    - Slurry handling for organic manure

- **Technical sessions for food production units, piggeries, institutional kitchens, and dairy farms** on replacing LPG with biogas alternatives

Measurable impact:

- Reduced dependence on **LPG** (JSSMC: 16,754 kg, JSSCPO: 19,865 kg, JSSCPM: 14,600 kg consumption tracked for substitution planning)
- Increased awareness among industries for **cost savings + emission reduction**
- Encouraged replication in rural / semi-urban business operations

2. Solar Energy Exposure & Performance Knowledge Transfer

JSS AHER operates large-scale solar installations with documented output for 2024–25:

Institution	Solar Energy Generated (kWh)	Total Consumption (kWh)	Grid Electricity Offset (kWh)
JSS Medical College	403,500	477,654	74,154
JSS Dental College	357,865	298,548	– 59,317*
JSS College of Pharmacy, Mysuru	212,343	249,889	37,546
SLSM	0	224,976	224,976
JSSCPO	0	556,676	556,676

(*Excess solar offset not drawn from grid)

Industry engagement examples:

- Site visits by:
  - Educational institutions
  - Hostels
  - Small manufacturing units
  - Hospital administrators
- Technical sharing on:
  - Rooftop solar planning
  - Capacity optimisation
  - Grid-tied vs off-grid systems
  - Cost–benefit payback analysis
- Data-driven sessions using JSS AHER's **monthly & annual energy monitoring reports**

This allowed industries to **visualise real savings and feasibility** before investment.

3. Energy Performance Monitoring & Audit Support (ISO 50001 Model Sharing)

As an **ISO 50001:2018 (Energy Management System) and ISO 14001:2015 (Environmental Management System)** certified institution, JSS AHER provided **best**

practice guidance to local organisations on setting up simple internal energy monitoring systems.

Services offered:

- Demonstration of monthly tracking:
    - Solar contribution
    - Grid dependency
    - Load fluctuations
    - Peak demand variations
- Sharing templates for:
    - Energy performance indicators (EnPI)
    - Baseline setting
    - Annual comparison matrices
- Guidance to:
    - Clinics
    - Small labs
    - Schools
    - Hostels
    - Processing units

This helped industries begin **data-based energy decision-making**, a critical requirement in modern green compliance.

4. Training through School of Public Health – Environmental & Energy Linkages

Through multiple **field-based learning programmes in 2024–25**, JSS AHER strengthened industry and municipal awareness on environmental efficiency:

Key integration visits and learning points:

Mysuru Sewage Treatment Plant (30 May 2025)

- Exposure to energy-efficient aeration systems
- Demonstration of water recycling reducing energy demand
- Sustainable landscape irrigation model

Vani Vilas Water Treatment Plant (29 May 2025)

- Efficient purification & pumping systems
- Rapid sand filters & backwashing mechanisms
- Chemical optimisation – reducing resource waste

SVYM – Climate Smart Health Unit

- Low-energy, community-focused sustainable infrastructure
- Renewable-powered healthcare units

These visits, combined with reports and academic dissemination, allowed knowledge transfer to **municipal engineers, NGOs, micro-entrepreneurs, and allied services.**

5. Green Infrastructure & Building Efficiency Guidance

Based on EDGE, IGBC, LEED and ECBC frameworks, JSS AHER in 2024–25:

- Provided **consultative guidance** on:
  - Natural lighting & ventilation
  - Passive design
  - LED retrofitting
  - Bioclimatic planning
- Promoted:
  - Motion-sensor lighting
  - Daylight harvesting
  - High-efficiency building materials
- Shared case examples of:
  - Atrium-based lighting at JSS Medical College
  - Tree canopy cooling impact
  - Natural ventilation reducing HVAC load

This directly guided architects, builders and small commercial owners towards **sustainable renovation models**.

6. Awareness & Advocacy for Industry Transition

Through **JSS Community Radio, public stalls, campaigns, and academic–industrial meets**, JSS AHER promoted:

- Rooftop solar for commercial buildings
- Waste segregation for energy conversion
- Reduction in diesel generator dependence
- EV charging readiness for institutions
- Sustainable food unit operations under **Eat Right Campus**

Events like **SEVA SANKRAMANA 2025**, school outreach and environmental campaigns brought together:

- Local authorities
- Entrepreneurs
- NGOs
- CSR bodies
- Industry representatives

This strengthened **behavioural commitment to clean energy** across sectors.

Quantified Outcomes (2024–25)

- **973,708 kWh of solar power generated** across major JSS units
- **Reduction of grid dependency up to 60–70%** in solar-equipped campuses
- **~20–25 kWh/day** energy from biogas systems
- **Over 15+ organisations and industries** engaged through demonstration & training
- **Direct technical guidance to waste-generating institutions**
- **Carbon footprint mitigation integrated into health & infrastructure planning**

Conclusion

In 2024–25, JSS Academy of Higher Education & Research significantly expanded its **direct services to local industry** for improving **energy efficiency and clean energy transition** through:

✓ Demonstration-based learning
✓ Technical training & audits
✓ Real-time performance data sharing
✓ Renewable energy exposure
✓ Sustainable building advisory
✓ Environmental systems integration

These actions position JSS AHER as a **regional leader in sustainable institutional–industrial collaboration**, assisting local organisations to reduce costs, lower emissions, improve compliance, and adopt a **future-ready clean energy model**.

JSS AHER's approach goes beyond education — it actively **contributes to regional green transformation and climate resilience.**