IMPLEMENTATION OF SDG-7: AFFORDABLE AND CLEAN ENERGY IN SHOOLINI UNIVERSITY, HIMACHAL PRADESH, INDIA

STATUS REPORT 2025



SUSTAINABLE DEVELOPMENT GOALS

Shoolini University

CEEST
Centre of Excellence in Energy Science and Technology

Centre of Excellence in Energy Science and Technology
Shoolini University, Bahjol, Solan, Himachal Pradesh-173229
www.shooliniuniversity.com

Executive Summary

As per THE Impact Ranking, in 2025, Shoolini University has bagged top No.21 global ranking for SDG 7. The Centre of Excellence in Energy Science and Technology (CEEST) is coordinating the implementation of United Nations Sustainable Development Goals (UNSDGs) in Shoolini University. In order to ensure the access to affordable, reliable, clean, and sustainable energy for all, the University has taken several measures and formulated and implemented the Energy and Environment Policies in order to achieve the UNSDG targets. Shoolini University has prepared the National Document on the Implementation of United Nations Sustainable Development Goals (UNSDGs) in Higher Education Institutions in collaboration with Association of Indian Universities (AIU). Under this initiative a number of steps in awareness, education, research and transfer of technology have been taken to utilize renewable energy sources to conserve energy, reduce carbon emissions and combat climate change impact by 2030. The use of solar energy for power generation, reduction in the use of fossil fuels in transportation, community cooking, building design and construction have been taken. This report presents the status of implementation of UNSDG SDG-7 and governing policy at Shoolini University, Solan, Himachal Pradesh, India in 2025.

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1. Introduction

The Centre of Excellence in Energy Science and Technology (CEEST) is coordinating the implementation of United Nations Sustainable Development Goals (UNSDGs) in the Shoolini University. In order to ensure the access to affordable, reliable, clean, and sustainable energy for all, Shoolini University has taken several measures in renewable energy education research, technology implementation and formulated and implemented the Energy & Environment and other sustainability policies in order to achieve the UNSDG -7 targets. The university intends to develop itself as a sustainable energy education and research hub and a sustainable development township to act as a model for other Higher Education Institutions in India. CEEST was established in 2019 which is led by Prof. Shyam Singh Chandel who comes under the global top 2% scientists according to research conducted by Stanford University.

The University has implemented several environmentally friendly solar projects in the University campus for generating solar electricity, hot water and solar steam cooking and energy efficient net zero energy buildings. Under the projects from Ministry of New & Renewable Energy, Govt of India, the Campus of Shoolini University has been converted into a Green Energy Campus with solar energy utilization & environmentally friendly technologies.

1.1 Education

The global thrust on utilization of Renewable Energy utilization to reduce greenhouse gas emissions for climate change mitigation calls for all organizations and higher education institutions to take immediate measures to lower their carbon footprint. Shoolini University has established a Shoolini University has established a Centre of Excellence in Energy Science & Technology and

large number of research publications have already been published through the same (List given in Annexure-I).

1.2 Research in Energy and Climate Action

A large number of research papers in these areas have been published in top ranking Journals which has led to top No.21 global ranking for SDG 7 for the University as per THE global impact ranking in 2025 and No. 13 in 2026.

Evidence:

SDG-7 Rank (2026): https://www.timeshighereducation.com/impactrankings/affordable-and-clean-energy

SDG-7 Rank (2025): https://www.timeshighereducation.com/rankings/impact/affordable-and-clean-energy/2025

Research in Energy, FWCI metrics related to SDG-7 of Shoolini University:

Table 1: *Field-Weighted Citation Impact of Shoolini University for SDG-7 for year 2025 as per SciVal Database*

Name	Scholarly Output	Field-Weighted Citation Impact	Citation Count
SDG 7: Affordable and Clean Energy (2025)	102	1.77	1563
SDG 13: Climate Action (2025)	54	2.57	1060

CEEST has catalysed the action on sustainable Development goals in the University by preparing a National Document on the Implementation of UN SDGs in Higher Education Institutions in India in collaboration with Association of Indian Universities (AIU) which was published in 2023.

Already a governing 'Energy and Environment Policy' has been formulated in 2019 to set the roadmap and required actions to make the University carbon neutral by 2030. The scientists are working in priority research areas on Climate change in Energy, especially use of renewable energy applications in Agriculture, Sciences, Engineering, Biotechnology, Food technology and Pharmacy. The main objective of these initiatives is to develop the University as a sustainable education and research hub and township to be model for the higher education Institutions in India.

Scimago Institutions Rankings (Energy)

- World: 508th
- India: 9th
- Asiatic Region: 191st
- BRICS: 144th

https://www.scimagoir.com/institution.php?idp=90167

2. Initiative on Solar Photovoltaic power generation -Installation of a 400 kWp Grid Connected Solar Photovoltaic Power Plant - An initiative under United Nations Goal 7 and 13

Solar Energy is harnessed through Solar Photovoltaic panels installed on the rooftops of the University building blocks, hostels and car parking. The University campus is connected to the main grid operated by HP State Electricity Board (HPSEB). The solar electricity so generated is used to meet the partial energy needs of the University. The electrical energy used by the university was 19,31,579 kWh or 6,954 GJ and that generated by solar PV plant was 3,61,577 kWh or 1,302 GJ for 2025.





Figure 1: 400 kWp Grid connected Solar Photovoltaic Power Plant at Shoolini University

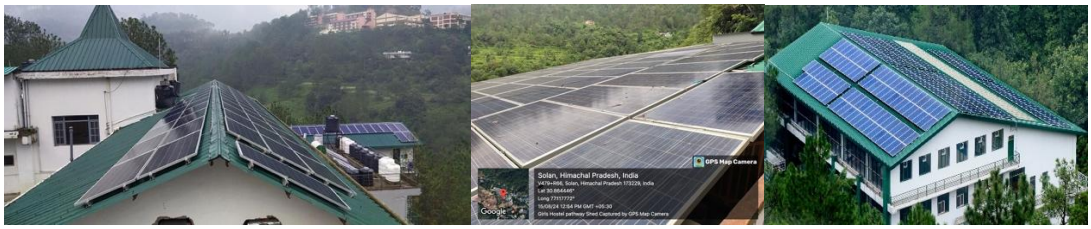


Figure 2: Distribution of 400kWp grid-connected Solar Photovoltaic Power Plant on different rooftops in the University campus.

3. Concentrated Solar Steam Generating Cooking System

A Solar steam generating cooking system (Scheffler Type) is installed on the roof top of Girls hostel of Shoolini University. The system is based on the concentrated solar technology.



Figure 3: Concentrated solar powered community steam cooking system

The solar radiation falling on the dish, is concentrated onto a receiver, which heats the water and convert into steam to cook food for 500 girl students residing in the hostel saving about 2 LPG gas cylinders every day thus saving conventional fuel and money.



Figure 4: Concentrated solar steam cooking system installed on roof top of the Shoolini University

4. Solar water heating systems for hostels

Solar flat plate collector and evacuated tube collectors are installed in all hostels of the University provide hot water daily for hostel residents.



Figure 5: Installation of 38000 litres per day solar water heating systems in the university campus.

5. Reducing fossil fuel consumption and carbon dioxide emissions use of electric carts for local transportation in the campus

The university has introduced three electric carts for local transportation for students, faculty and visitors inside the university campus to restrict the movement of personal vehicles inside the campus during working hours.



Figure 6: Electric Carts for local transportation in the university campus.

6. Bio-energy utilization - Use of biogas for Cooking from agriculture and Animal Wastes

In order to utilize agriculture, cow dung, food waste and kitchen waste, and promote the research and use of biogas as the fuel, the CEEST has installed a 1.5 m^3 Plastic biogas system for demonstrating use of non-polluting fuel in the agricultural farm of the University which is being used for cooking by the farm laborers.



Figure 7: Biogas plant for cooking installed in agriculture farm in Shoolini university

7. Installation of Solar Street Lights

Shoolini University has installed more than 50 solar streetlights of 40W capacity inside the campus for nighttime lighting purposes thus utilizing free Solar energy and saving conventional electricity. Small 5W solar path lights are also installed.

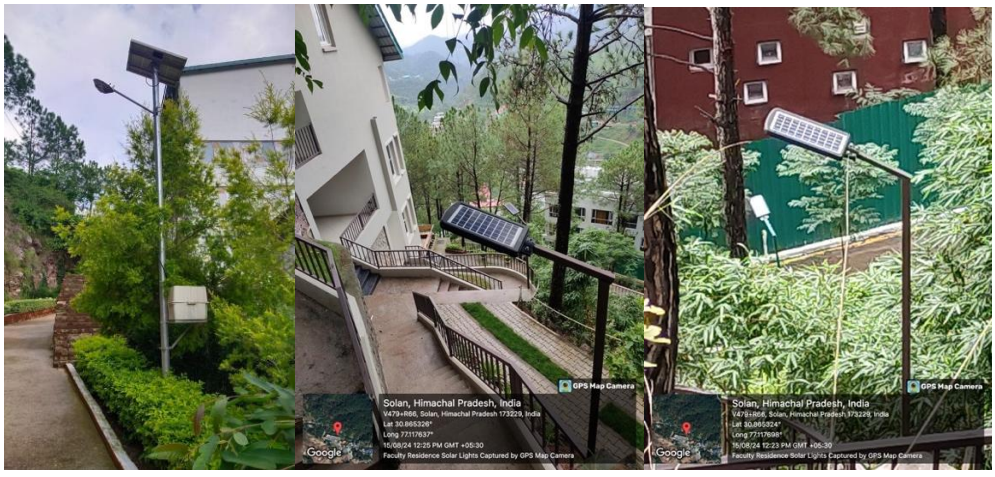




Figure 8: Solar streetlights installed in the University campus.

8. Monitoring solar, wind, and other climate data for research

CEEST has installed a high-quality automatic weather station on the roof top of the library building that monitors global solar irradiance, wind speed, wind direction, temperature, relative humidity, rainfall data as well as photosynthetic active radiation which are critical for research and development of new energy technologies, climate change related hence contributing towards research and development SDG-7 and SDG-13. The data are being used in boosting the reliable research and development of renewable energy technologies, by utilization of the renewable resources, and making plans for the sustainable township.



Figure 9: Automatic weather station installed at Shoolini University.



Figure 10: 5kW wind turbine newly installed at the university

9. Participation in National and International Conferences Related to Energy

Teachers, researchers, and students have participated in international and national conferences related in the field of renewable resources, storage systems, smart grids, hybrid systems, etc.

10.Energy Conservation & Energy Efficiency improvement

Sensors are used for energy conservation in the University. 95% of lights in the university are LED based 20-Watt tube light which saves up to 50% energy. Most streetlights in the campus have photocell controllers, which switch the light on and off at the right natural light levels, normally near dusk and dawn. These sensors have time delays and hysteresis to prevent change-over too quickly. There is a plan to convert to 100% sensor-based street lighting/ outdoor lighting system to prevent wastage of electricity.

Use of LED Lighting: University campus is moving towards total LED lighting system, which are more efficient than incandescent light bulbs or compact fluorescent lighting (CFL). The campus has 95%, 20 W LED lights.



Figure 11: LED lights installed inside the university buildings

Use of more efficient water and air heating systems: The university has installed 8kW heat pump-based water heating system in the international hostel and PTC air heaters to optimize and improve energy efficiency.



Figure 12: Energy efficient heat-pump based water heating system has been installed in the international hostel Shoolini University



Figure 13: Energy efficient PTC air heaters have been installed all international hostel rooms

Use of energy efficient architectural features: The university has incorporated various features in the new buildings like use of natural lighting and solar energy, use of Autoclaved Aerated Concrete (AAC) blocks, 'Rat Trap' Builds i.e. cavity induced in wall which provides the advantage of thermal comfort. A newly constructed Trombe was also integrated in the new Animal House Building at Shoolini University (figure-17) that lowers the air-conditioning requirement by naturally heating the adjacent room by use of solar energy.



Figure 14: Use of large windows for increased solar gain and increased use of natural lighting.



Figure 15: Walls using AAC blocks for better insulation and energy efficiency



Figure 16: Solar Trombe Wall constructed by CEEST in the new Animal House Building to reduce air-conditioning requirements and natural space heating by use of solar energy.

11. Energy Policy of Shoolini University

Shoolini University is committed to United Nations Sustainable Development Goals through its innovative energy policy to make Shoolini University a sustainable, energy efficient green campus. This energy policy applies to all operations and activities of the University including building construction, renovation, transportation, and any other operations for improving energy efficiency through the installation of energy efficient systems and use of renewable energy sources. The environment protection, efficient water management and fossil fuel use reduction in various activities undertaken by the University are the linked aspects of this policy. The various measures are to be undertaken for the divestment of energy consuming, and fossil fuel based existing equipment/vehicles etc., with innovative energy efficient systems and to invest in Climate Change solutions for a Carbon Neutral University Campus by 2030.

11.1. Policy Goals

- To take measures to reduce greenhouse gas emissions to make Shoolini University as Net Zero or near Zero building Carbon neutral Campus preferably by 2030.
- To design and construct all the new buildings by incorporating energy efficient, solar passive building, water conserving and environment friendly building technologies.
- To discourage the fossil fuel-based power generation by utilizing renewable energy sources, solar roof-top PV /hybrid systems, waste to energy generation, to meet the energy requirements of the University.

- Measures will be taken to use solar water heating systems, solar steam cooking systems, in university hostels to save LPG and other conventional fuels.
- To take necessary steps to regulate public transportation inside the campus and, and to utilize electric vehicles inside the campus for essential transportation.

11.2 Initiatives already taken under the Solar Energy Policy – Summary

Energy Conservation: Energy conservation is major concern for planning the construction of buildings in a sustainable campus. Nestled in the green and salubrious clime of pine forests, the buildings have been constructed allowing maximum light, ventilation with natural air circulation in all rooms and halls, thereby saving on electricity consumption. There is a major endeavor at Shoolini University to conserve energy and promote the usage of alternate energy sources. Actions taken in this direction have helped in making the campus green, energy efficient and energy surplus. Apart from the measures described below, there are buildings like the Yogananda Knowledge Center (Central Library) that use the natural light during the day.

The faculty, employees and students lead initiatives also save significant electricity and have developed a policy for reducing electricity consumption by using LED and replacing the old florescent tube lights with energy efficient LEDs. All the computer monitors have been replaced with LED/LCDs displays. Replacement of old energy consuming appliances like lights, fans with energy-efficient appliances is underway.

- **Green Energy Campus:** Under the Ministry of New & Renewable Energy, Govt of India, the Campus of Shoolini University is a green energy Campus with maximum Solar Energy utilization & environmentally friendly technology use. The establishment of Centre of Excellence in Energy Science & Technology in 2019 focusses on energy Education and Research.
- **Solar Energy** is harnessed through Solar Photovoltaic panels installed on the rooftops of most of the University building blocks and covered common areas exposed to sunlight, like the car park, part of the internal road etc., converting sunlight into electric energy. The University campus is connected to the State electricity grid through a grid interactive system. The generated electricity partially meets the requirements of the university and excess generated electricity is transferred to the grid sub-station.
- **Solar Steam Generating Cooking Systems (Scheffler Type) in Girls Hostel of Shoolini University**: A solar steam generating system based on Concentrated Solar Technology Solar radiation falling onto the dish is concentrated onto the receiver, which heats the water which is converted into steam to cook food for 500 students.
- **Solar Water Heating Systems for hostels:** Flat Plate Collector and evacuated Tube collectors are installed in all hostels of the University to provide hot water.

- **Sensor-Based energy Conservation** is being practiced. Most streetlights in the campus have photocell controllers, which switch the light on and off at the right natural light level, normally near dusk and dawn. They have time delays and hysteresis to prevent change-over too quickly. There is a plan to convert to 100% sensor-based street lighting/ outdoor lighting system to prevent wastage of electricity.
- **Use of LED Lighting:** University campus is using LED lighting system, far more efficient than incandescent light bulbs or compact fluorescent lighting (CFL).

12. Solar Passive building technology Policy Initiative-towards Net Zero and Zero Carbon Emission Buildings

Shoolini University has made it mandatory to design and construct all the buildings in its campus as per passive solar architecture and incorporating energy efficient building technologies and environment friendly building materials following the Solar House Action Plan & Policy adopted in the State of Himachal Pradesh.

- The feasibility of existing buildings for retrofitting of Passive Solar features/systems for improving energy efficiency and reducing energy consumption will be explored for urgent follow up action.

Co-ordination & Implementation Guidelines

i. The Centre of Excellence in Energy Science & Technology (CEEST), established in 2019 at the Shoolini University coordinates the Solar Building Action Plan for Shoolini University.

ii. A technical Project Management Cell (TPMC) has been established in the CEEST with Director (Energy) as the Principal Coordinator along with expert team in solar building design, renewable technology analysis, Director (Estate) & building maintenance in charge with concerned architect, civil/electrical engineer team for the construction implementation and maintenance.

iii. A Computer Aided Solar Passive Design Cell with architect, design engineer [structural], executive engineer, a computer programmer well versed in building design software, AutoCAD, seismic analysis software, along with Solar radiation data & building performance monitoring, forecasting load analysis using Artificial Intelligence techniques will be established.

iv. The constructed buildings will be live laboratories for energy education, research and development for CEEST.

v. Systematic efforts will be made by CEEST to orient & train University's technical. Architecture and engineering sections for adopting the innovative technologies.

vi. The CEEST will also promote the technology around nearby villages to help design their houses as social obligation to the communities along with providing technology inputs for the State of Himachal Pradesh Housing Agencies for effective implementation & Policy formulation.

13.1 Constructing low carbon footprint buildings -use of environment friendly Building materials

Under the mandatory Net Zero Energy and Passive Solar housing Policy, the university has developed a Yoga Nanda Ville with a number of solar huts in the campus using sustainable building materials like wood, bamboo, slate, stone, mud, stabilized mud blocks etc. shown in the following figures.

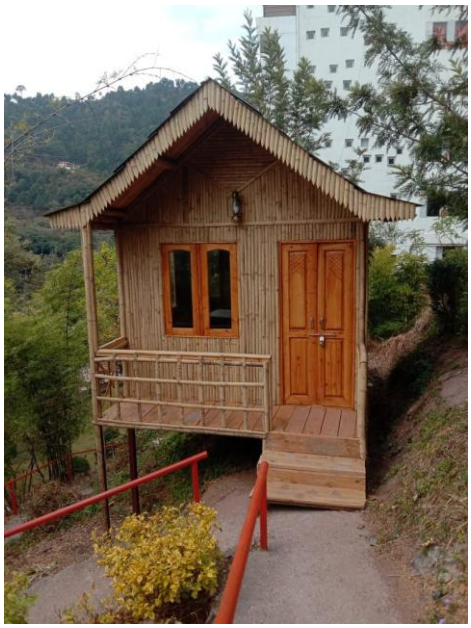


Figure 17: Wooden huts /houses at Shoolini University.



Figure 18: Bamboo and slate Roof E-Studio for online lectures constructed during COVID times



Figure 19: Living with Nature - Eco friendly Bamboo Tree Houses in the campus for student interaction



Figure 20: Use of Traditional and Climate responsive Building Materials -Two storeyed Guest House.



Figure 21: Sustainable building of Tagore School of Design at Shoolini University.



Figure 22: Sustainable energy building in Yogananda Ville at Shoolini University.



Figure 23: Tree houses in the campus

14. Environment Policy for Shoolini University

Shoolini University is committed to United Nations Sustainable Development Goals (SDGs) through its innovative Environment Policy which makes Shoolini University a sustainable, energy efficient and environment friendly green campus. This Environment Policy applies to all the operation and activities of the University including building construction and renovation,

transportation, water, waste management and all its operations and activities undertaken by the university.

14.1 Policy Goals

- To protect environment in and around Shoolini University
- To develop a systematic waste management mechanism
- To develop rainwater harvesting system for water conservation and recharging
- To provide training and information on energy & environment protection measures
- To create awareness among students, faculty, employees and public to engage in initiatives those contribute for environment protection
- To reduce, reuse and plastic in any manner inside the University campus
- To create awareness on single use plastics impact on environment and encourage use of natural alternatives
- To explore production of energy from waste
- To take measures for the effective utilization of wastewater recycling
- To take measures to protect the forest and environment from forest fires



Figure 24: Dustbins are placed at all locations in the university accomplishing zero littering in the campus. Dustbins itself are not made of plastics but natural materials.

Other policies related to sustainability: Several other policies have been drafted to guide the university's sustainability initiatives which are listed as follows:

- *Divestment Policy*
- *Sustainable Procurement Policy*
- *Sustainable Investment Policy*
- *Hazardous Wastes Disposal Policy*
- *Minimized use of Plastics Policy*

- *Policy on Ethical Sourcing of Food and Supplies*
- *Waste Disposal to Landfills and Recycling Policy*
- *E-Waste Policy*

15. SDG-7 related Society Awareness Campaigns and Events

Conferences and Events

1 International Earth Day Celebration

SDG 4: Quality Education, SDG 7: Affordable and Clean Energy, SDG 11: Sustainable Cities and Communities, SDG 12: Responsible Consumption and Production & SDG 13: Climate Action.

Venue: Covered Parking, Shoolini University
On April 24th, 2025, Shoolini University came alive with the spirit of Earth Day through a vibrant, purpose-driven celebration that united sustainability, innovation, and artistic expression. At the heart of the event was the Inter-School Eco-Challenge , where nine schools competed passionately across four dynamic categories: Clean Energy Live Demo, Waste-to-Wonder DIY Challenge, Green Bazaar Exhibition, and Poster Making. Each school brought forward incredible creativity and collaboration—demonstrating working models of clean energy, repurposing waste into functional and beautiful products, setting up stalls that embodied the 3Rs (Reduce, Reuse, Recycle), and crafting thought-provoking posters under the theme "Our Power, Our Planet." This spirited challenge ignited both friendly competition and a deeper commitment to environmental stewardship.



Figure 25: International Earth Day Event Poster 2025.



Figure 26: Prof. P.K. Khosla at the International Earth Day Event interacting with students



Figure 27: Various sustainable handicrafts made by the students at display during the earth day.

2 Walking into a Greener Tomorrow: Campus Tour (Induction 2025)

SDG 7 Affordable and Clean Energy, SDG 3: Good Health & Well-being, SDG 4: Quality Education SDG 6: Clean Water and Sanitation, SDG 7: Affordable and Clean Energy, SDG 11: Sustainable Cities and Communities, SDG 12: Responsible Consumption and Production, SDG 13: Climate Action & SDG 15: Life on Land

Date: August 21-23, 2025

The Campus Tour organized during Induction 2025 between 21st and 23rd August was carefully designed to introduce freshers to their new academic home while embedding within them a sense of responsibility towards the environment. More than just an orientation walk, it was a guided journey into the sustainable heartbeat of the university, where every building, pathway, and practice reflects the institution's green commitment.

One of the most memorable stops on the tour was the Yogananda Library—a symbol of both learning and sustainability. Students were welcomed by colorful, student-friendly posters placed throughout the library, each carrying engaging messages on themes such as energy conservation, water management, and responsible consumption. Walking through the aisles, freshers were not only introduced to academic resources but also to the green principles guiding the campus. Beyond the library, the tour covered a series of sustainability-rich spaces across campus. At the solar rooftops, students learned how clean energy powers classrooms and laboratories.

Adding a fun and interactive element, the orientation also included classic campus games such as tug-of-war and sack races. These activities fostered team spirit, encouraged collaboration among students, and offered a lighthearted way to reinforce the values of participation, fairness, and community engagement.

The impact of the tour was both immediate and lasting. Over 400 students actively participated on each day, with sustainability-themed photographs uploaded during the event. Nearly all participants pledged to adopt eco-friendly practices in their daily routines. The library posters, in particular, received special appreciation for making sustainability messaging both visually appealing and academically relevant, turning the library into not just a space of knowledge, but also of environmental awareness.

In conclusion, the Campus Tour of Induction 2025 successfully oriented students not just to the university's infrastructure but to its values. By highlighting spaces like the library, and green zones, and by making sustainability fun through creative posters and interactive activities, the tour helped freshers recognize that they are part of a campus community where environmental consciousness is a shared responsibility.



Figure 28: Organizers posing SDG posters for campus tour event.



Figure 29: Students participating in games organized during campus tour event.

3 International Conference on Applied Artificial Intelligence and Innovation (AAIIC 2025)

Organising Institution: Yogananda School of AI, Computers, and Data Science (YSAICDS), Shoolini University, Solan, Himachal Pradesh, India
Date: 11–12 July 2025
Duration: Two Days International Conference
Participants: Academicians, researchers, faculty members, students, and industry professionals
Conference Theme: Applied Artificial Intelligence and Innovation

The Yogananda School of AI, Computers, and Data Science (YSAICDS) at Shoolini University organised the **International Conference on Applied Artificial Intelligence and Innovation (AAIIC 2025)**, a two-day academic and research event bringing together experts, researchers, academicians, and industry professionals to discuss emerging developments and practical applications of artificial intelligence (AI). The conference provided a platform for knowledge-sharing, interdisciplinary research, international academic interaction, and industry engagement. Various academic and industry fields participated in the event, contributing to discussions on the growing role of AI in education, **energy**, ethics, intelligent systems, automation, manufacturing, and enterprise solutions.

The conference featured international speakers who shared research insights and expertise in emerging AI technologies and their practical applications. Speakers included:

- **Sanjay Misra** – Universidad de Alcalá, as listed in the conference announcement.
- **Shailendra Rathore** – Abertay University, United Kingdom.
- **Yerzhan Kerimbekov** – Zhanibekov University, Kazakhstan.
- **Laura Baitokayeva** – Nazarbayev Intellectual School, Kazakhstan.
- **Tomáš Čech** – Palacký University, Czech Republic.

The conference also involved Prof. Manju Khari of Jawaharlal Nehru University and Prof. K. K. Patel of Charotar University of Science and Technology as Conference Theme Chairs. They emphasised the importance of collective learning, teamwork, and research collaboration in advancing the field of artificial intelligence.
The participation of speakers from different institutions and countries strengthened the conference's international academic character and provided opportunities for exchanging research knowledge and perspectives.

Industry Participation and Practical Applications

An important component of AAIIC 2025 was the involvement of industry professionals. Senior professionals from Tata Consultancy Services (TCS), Apoorv Aggarwal and Rajit Sikka, shared insights into the practical application of AI across automation, manufacturing, and enterprise solutions.

Their sessions highlighted how businesses are integrating AI technologies into operational processes, developing intelligent systems, and improving the application of digital technologies in industrial environments.

This academic–industry interaction helped connect theoretical research with practical requirements and demonstrated the value of cooperation between universities and industry in technological innovation.

Major Themes and Areas of Discussion

The conference explored a range of themes related to the development and application of AI, including:

Artificial Intelligence in Energy: Examination of AI applications in energy-related systems and technological innovation.

AI in Education: Discussion of emerging AI applications that can support educational practices, research, and learning processes.

Ethics and Responsible AI: Consideration of ethical questions and the responsible development and application of artificial intelligence.

Intelligent Systems: Exploration of emerging research and applications in intelligent computing and AI-driven systems.

AI in Industry: Discussion of applications in automation, manufacturing, enterprise systems, and industrial operations.

These themes encouraged interdisciplinary dialogue and highlighted the potential of artificial intelligence to address challenges across academic, industrial, and societal contexts.

Relevance to Sustainable Development Goals

SDG 7: Affordable and Clean Energy

The conference included discussions on AI in energy, providing a thematic connection with **SDG 7 – Affordable and Clean Energy**. AI technologies have potential applications in energy-system optimisation, energy-demand analysis, operational efficiency, and the integration of emerging energy technologies.

The conference's energy-related discussions therefore offered a platform for exploring the role of AI in energy innovation. However, any claim that specific renewable-energy or energy-efficiency outcomes were achieved would require additional evidence from the conference programme, presentation materials, or proceedings.

SDG 13: Climate Action

Artificial intelligence can contribute to climate-related research through environmental data analysis, climate modelling, monitoring systems, and the development of technology-based approaches to environmental challenges.

AAIIC 2025 promoted discussion and collaboration around applied AI and innovation, creating a potential connection with technology-driven approaches to sustainability. Nevertheless, the available conference description does not establish a dedicated climate-action session or a measured climate impact. A direct SDG 13 claim should therefore be supported by relevant presentation titles, abstracts, or session documentation.

Outcomes and Significance

The conference brought together 72 participants from academic and industry fields and provided opportunities to:

1. Exchange research knowledge and perspectives on emerging artificial intelligence technologies.
2. Encourage international academic interaction and interdisciplinary collaboration.
3. Connect academic research with industry applications in automation, manufacturing, and enterprise solutions.
4. Explore AI applications across energy, education, ethics, and intelligent systems.
5. Highlight opportunities for collaboration between researchers, students, and industry professionals.

Suggested Supporting Evidence

News link; https://shooliniuniversity.com/news/shoolini-hosts-global-conference-on-applied-ai-and-innovation

Photographs:




SOLUTION



16. Support for new technology development and entrepreneurs

CEEST, Shoolini University also hosts Technology Incubation Centre of Ministry of Micro, Small and Medium Enterprises (MSME) and supports innovative ideas from students, entrepreneurs and startups in the state of Himachal Pradesh and encourages use of new sustainable technologies to contribute towards SDGs. CEEST evaluates various business proposals and innovative ideas under the MSME Hackathon Programme every year.

CEEST also offers Energy efficiency services for industry:

Link: https://iqac.shooliniuniversity.com/storage/app/public/images/202411060456Consultancy-Pamphlet-final.pdf

Annexure-I: List of research publications related to SDG-7

Title	Authors	Year	Scopus Source title	Publisher	Cite Score	DOI
A novel regulatory framework for implementing distributed solar mini-grids with battery energy storage under the virtual power plant architecture in India	Dwipen Boruah , Shyam Singh Chandel	2025	Journal of Energy Storage	Elsevier B.V.	16.6	10.1016/j.est.2025.117732
A comprehensive review on future research trends in solar cell parameter extraction techniques	Prashant Malik , Shyam Singh Chandel , Rajesh Gupta	2025	Renewable Energy	Elsevier B.V.	18.1	10.1016/j.renene.2025.123427
Daily power generation forecasting for a grid-connected solar power plant using transfer learning technique	Tajjour, S.| Chandel, S.S.| Malik, H.| Márquez, F.P.G.| Alotaibi, M.A.	2025	Applied Intelligence	Springer	9.1	10.1007/s10489-024-06090-w
A comprehensive assessment of measures for enhancing access to electricity through decentralised solar mini grids in remote regions of Sub-Saharan Africa, Latin America, and Asian Countries including India	Rajeev Gyani , Shyam Singh Chandel	2025	Next Research	Elsevier B.V.	-	10.1016/j.nexres.2025.100963
Comparative performance analysis of a 100 KWp solar Microgrid for enhanced power generation	Salwan Tajjour, Shyam Singh Chandel, Rahul Chandel, Rajeev Gyani	2025	Next Research	Elsevier B.V.	-	10.1016/j.nexres.2025.100208

Sustainability of access to electricity through 17 functional off-grid solar photovoltaic systems after 20 years of operation in a remote wildlife sanctuary of India -a case study	Rajeev Gyani, Shyam Singh Chandel, Rahul Chandel, Dwipen Boruah	2025	Next Research	Elsevier B.V.	-	10.1016/j.nexres.2025.101197
Potential and performance assessment of solar photovoltaic systems across diverse climatic conditions: A comprehensive analysis	Malik, P.| Chandel, S.S.| Gupta, R.	2025	Energy for Sustainable Development	Elsevier B.V.	9.9	10.1016/j.esd.2025.101851
MOFs-based S-scheme heterojunction photocatalysts: Challenges and prospects to break the selectivity limitation for intensified C1 products in CO2 photoreduction	Malhotra, M.| Soni, V.| Kumar, R.| Tarannum| Singh, P.| Thakur, S.| Le, Q.V.| Nguyen, L.H.| Nguyen, V.-H.| Raizada, P.	2025	Chemical Engineering Journal	Elsevier B.V.	19.6	10.1016/j.cej.2025.160238
Unlocking the non-covalent electrostatic engineering of photocatalysts: From molecular interactions to multifield tuning strategies toward enhanced charge dynamics	Kumar, R.| Malhotra, M.| Sudhaik, A.| Raizada, P.| Luu, X.-C.| Parwaz Khan, A.A.| Thakur, S.| Ahamad, T.| Nguyen, V.-H.| Singh, P.	2025	Advanced Powder Materials	KeAi Communications Co.	46.4	10.1016/j.apmate.2025.100338
Bi2S3-based photocatalysts: Properties, synthesis, modification strategies, and mechanistic insights towards environmental sustainability and green energy technologies	Chawla, A.| Sudhaik, A.| Sonu| Kumar, R.| Raizada, P.| Ahamad, T.| Khan, A.A.P.| Van Le, Q.| Nguyen, V.-H.| Thakur, S.| Singh, P.	2025	Coordination Chemistry Reviews	Elsevier B.V.	39.9	10.1016/j.ccr.2025.216443

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