AF 7

Activity Proposal Form

Particulars	Details
Name of the Activity	**ISTE Approved Short Term Training Program (STTP) on "Recent Trends in Renewable Energy Systems".**
Type of Activity (Workshop/Seminar/etc.)	STTP
Objectives	Introduce fundamentals of renewable energy systems, Highlight recent trends and technologies, Promote sustainable energy solutions, Enhance practical and technical skills, Encourage research and innovation and Create awareness of policies and market trends
Target Audience	Academicians, Research Scholars and Industry Professionals
Proposed Date and Time	08th to 13th December 2025, 07:00 to 09:30 pm.
Venue	Online
Estimated Budget and Funding Source as per Form No. AF 8	Self-Funded
Required Approvals or Permissions	Permission for the conduct of STTP.
Name of Resource Person with Affiliation	To be identified / confirmed

Prepared By	Checked By
Name & Dated Signature of Coordinator	**Name & Dated Signature of Head/Committee In charge**
Dr. Jagdish Pawar Mr. Sangam Rane	Dr. Kishor Rambhad, HOD Mech. Eng.

Approved By

Principal Signature

Date: 23/07/2025

Date: 23/07/2025

ISTE Approved Short Term Training Program (STTP) on "Recent Trends in Renewable Energy Systems".

Day 1: Introduction to Renewable Energy Systems and Global Trends

Main Theme: Overview and Significance
Subtopics:

- Overview of conventional vs. renewable energy
- Global energy demand and sustainability concerns
- Renewable energy potential in India and worldwide
- Policy frameworks and international agreements (e.g., Paris Agreement)
- Current statistics and future projections

Day 2: Solar Energy Technologies

Main Theme: Advancements and Applications
Subtopics:

- Photovoltaic (PV) technologies: mono, poly, PERC, bifacial
- Concentrated Solar Power (CSP)
- Emerging technologies: perovskite, organic PVs
- Solar panel efficiency trends
- Solar system integration (rooftop, off-grid, hybrid systems)

Day 3: Wind and Bioenergy Systems

Main Theme: Harvesting Energy from Nature and Biomass
Subtopics:

- Wind turbine design and performance optimization
- Onshore vs. offshore wind farms
- Bioenergy sources: biogas, biomass, biofuels
- Waste-to-energy conversion technologies
- Case studies on community-scale bioenergy projects

Day 4: Energy Storage and Smart Grid Integration

Main Theme: Supporting Renewable Integration
Subtopics:

- Battery technologies: Li-ion, flow batteries, solid-state
- Pumped hydro, flywheel, and thermal storage
- Smart grid architecture and demand response
- Microgrid development and control strategies
- Challenges in grid integration of renewables

Day 5: Emerging Trends and Research Opportunities

Main Focus: Future-Ready Technologies
Subtopics:

- Green hydrogen production and applications
- Role of Artificial Intelligence in energy optimization
- Hybrid renewable energy systems
- Decentralized energy and microgrids
- Career and research opportunities in the renewable sector

Prepared By,
Dr. Jagdish Pawar , Mr.Sangam Rane

Approved By,
HOD

ABOUT SJCEM

St. John College of Engineering and Management (SJCEM), Palghar, is dedicated to holistic student development by combining academic excellence with skills such as leadership, teamwork, and communication. With modern infrastructure, experienced faculty, and a serene campus located in the rural and tribal region of Palghar near Mumbai, SJCEM offers a unique learning environment. The institution's focus on sustainability and social responsibility further enhances its commitment to shaping competent and socially conscious professionals.

Vision

"Excellence in Engineering Education & Creating Next-Gen Leaders / Managers in the Service of Society"

Mission

- Provide quality education with joyful learning and research
- Promote innovation and technology-driven teaching
- Nurture socially responsible and industry-ready professionals

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering at SJCEM is committed to technical excellence, innovation, and holistic student development. With modern laboratories, experienced faculty, and a practical, industry-oriented curriculum, the department emphasizes research, internships, workshops, and industrial visits. Students are encouraged to engage in projects and competitions, fostering creativity, problem-solving, and global competency.

PATRON

Mr. Albert W. D'Souza
Chairman

Mrs. Elvina D'Souza
Secretary

Mrs. Elaine D'Souza Buthello
Treasurer

Mr. Aldridge D'Souza
Member

CONVENER

Dr. Kamal Shah
Principal SJCEM,Palghar

Dr. Kishor Rambhad
HoD, Mechanical

Program Committee

Dr. Jagdish Pawar
Assistant Professor

Mr. Sangam Rane
Assistant Professor

ABOUT ISTE

The Indian Society for Technical Education (ISTE) is the leading national professional society dedicated to improving the technical education system in India. With over 1 lakh teacher members, 5.5 lakh student members, and numerous institutional chapters across the country, ISTE focuses on career development of teachers, personality development of students, and overall quality improvement of technical education through training, skill enhancement, and professional development programs.

WHO CAN ATTEND?

- Academician
- Research Scholars
- Industry persons
- UG & PG students
- Staffs/supporting staffs

Participants are advised to keep laptops for hands-on practice during the sessions.

ISTE Approved Online Short Term Training Programme (STTP) ON Recent Trends in Renewable Energy Systems

08-13 Dec, 2025

Coordinators

Dr. Jagdish B. Pawar | Mr. Sangam Rane

Organized by
Department of Mechanical Engineering
St. John Engineering and Management College Palghar (MH), India

In Association with the
ISTE, SJCEM

COURSE OBJECTIVE

Introduce fundamentals of renewable energy systems, Highlight recent trends and technologies, Promote sustainable energy solutions, Enhance practical and technical skills, Encourage research and innovation and Create awareness of policies and market trends

COURSE THEME/ SCOPE

The Short-Term Training Programme (STTP) on *"Recent Trends in Renewable Energy Systems"* aims to provide participants with comprehensive insights into the latest developments in renewable energy and modern power systems. The programme will cover advancements in solar, wind, bioenergy, energy storage, smart grids, and emerging technologies such as green hydrogen and AI applications. Expert sessions will focus on research trends, integration challenges, and innovative solutions for sustainable energy. This STTP is designed for faculty, researchers, engineers, and industry professionals to enhance knowledge, foster innovation, and address future energy challenges.

COURSE CONTENT/ TENTATIVE SCHEDULE

Day 1 – Renewable Energy Systems
Conventional vs. renewable, global demand, sustainability, policies & future potential
Day 2 – Solar Technologies
PV (mono, poly, PERC, bifacial), CSP, emerging solar tech, efficiency & system integration
Day 3 – Wind & Bioenergy
Wind turbines & optimization, offshore/onshore wind, biomass, biofuels & waste-to-energy
Day 4 – Energy Storage & Smart Grids
Battery technologies, hydro/thermal storage, smart grids, microgrids & integration challenges
Day 5 – Emerging Trends & Opportunities

RESOURCE PERSONS

Dr. Hitesh Panchal
Gujarat Technological University

Dr. Ramkishore Singh
TERI School of Advanced Studies, New Delhi, India

Dr. Prashant Deshmukh
SGGSIE&T, Nanded(MH),India

Dr. Sandeep Joshi
Senior Scientific Officer, MGIRI, Govt. of India

Dr. Ganesh R. Chavhan
Govt. College of Engineering, Chandrapur (MH),India

REGISTRATION PROCESS

Registration link

LINK :https://forms.gle/EUZG1ejndbfPmEuK6

Scan For Payment

WhatsApp Group link

STTP-2025-Recent Trends in Renewable Energy Systems[SJCEM,Palghar]

ELIGIBILITY

The training program is open to engineering college and polytechnic teachers, research scholars, PG students (M. Sc. And M. Tech) and Industry personnel.

Last Date of Registration: 5rd December, 2025

Registration Fee

UG/PG/Ph.D. Scholars	:	250/-
Faculty/ Industry Delegates	:	250/-
SJCEM Participants	:	200/-

The certificate of participation will be issued only to those candidates securing more than 80% attendance.

Note: Participants who are members of ISTE will be eligible to receive a certificate issued by ISTE.

E-certificates will be sent to the participants by email.

Organizing Committee

Mr. Kiran Beldar
Mr. Vivek Narnaware
Mr. Chirag Kale
Mr. Uday Prajapati
Mr. Sagar Patil
Mr. Swapnil Chitnis

Contact Details:

Dr. Jagdish B. Pawar /Mr. Sangam Rane **(Coordinators)**,
Department of Mechanical Engineering St. John Engineering and Management College Palghar (MH), India
Email: jagdishp@sjcem.edu.in, sangamr@sjcem.edu.in
Contact :8788018351, 9421924417

Scan For Registration

Last Date of Registration: 5rd December, 2025

ST. JOHN COLLEGE OF ENGINEERING & MANAGEMENT

Autonomous

(A Christian Religious Minority Institute)

Approved by AICTE, Recognised by DTE and Affiliated to the University of Mumbai, MSBTE

NAAC 'A+' Grade | NBA Accredited

CERTIFICATE

OF APPRECIATION

THIS CERTIFICATE IS AWARDED TO

Dr. Hitesh Panchal

for delivering an expert lecture as a **Resource Person** in the **Five-day Online Short Term Training Program (STTP)**, titled **'Recent Trends In Renewable Energy'** held from 8th to 12th **December, 2025**

organized by Department of Mechanical Engineering

under the aegis of

Indian Society for Technical Education (ISTE)

Dr. Jagdish Pawar	Dr. Kishor Rambhad	Dr. Kamal Shah
STTP, Coordinator	Hod, Mechanical	Principal

Founded 1968

Indian Society for Technical Education (ISTE)

Certificate

This is to certify that **Mr. Rahul N Yerrawar** *(LM 7098) has successfully completed ISTE approved Self-Financing STTP/Faculty Development Programme on* ***"RECENT TRENDS IN RENEWABLE ENERGY SYSTEMS"*** *held during 08.12.2025 to 13.12.2025 organized by ST. JOHN COLLEGE OF ENGG. AND MANAGEMENT, DIST. THANE, MAHARASHTRA.*

FDP-2025-26/434

Powered By Veri Once Blockchain

Executive Secretary

Founded 1968

Indian Society for Technical Education (ISTE)

Certificate

This is to certify that ***Dr. Pramod Walke*** *(LM 29865) has successfully completed ISTE approved Self-Financing STTP/Faculty Development Programme on* ***"RECENT TRENDS IN RENEWABLE ENERGY SYSTEMS"*** *held during 08.12.2025 to 13.12.2025 organized by ST. JOHN COLLEGE OF ENGG. AND MANAGEMENT, DIST. THANE, MAHARASHTRA.*

FDP-2025-26/435

Powered By Veri Once Blockchain

Executive Secretary

St. John College of Engineering and Management

Autonomous

(A Christian Religious Minority Institution)

Approved by AICTE and DTE, Affiliated to University of Mumbai / MSBTE

DTE Code : 3218 AICTE Permanent ID : 1-4790201

NAAC Accredited with Grade 'A+', Three Programs NBA Accredited

17.09.2025

To,
The Executive Secretary
Indian Society for Technical Education
Near Katwarai Sarai,
Shaheed Jeet Singh Marg,
New Delhi - 110016

Subject: Submission of Proforma for STTP "Recent Trends in Renewable Energy Systems"

(8th - 13th December 2025, Online Mode)

Dear Sir/Madam,

This is to inform you that **St. John College of Engineering and Management**, Department of Mechanical Engineering, is planning to organize a Short Term Training Programme (STTP) on the topic "Recent Trends in Renewable Energy Systems.

The STTP aims to provide a comprehensive platform for faculty members, industry professionals, and students to enhance their knowledge and skills in entrepreneurship, innovation, and startup development, in alignment with the objectives of NEP 2020.

Proposed Schedule:

8th December 2025 to 13th December 2025

Target Audience:

- Faculty Members (St. John College of Engineering and Management)
- Faculty Members from other institutions
- Industry Professionals
- Research Scholars
- UG and PG Students

We request ISTE's approval to conduct this one-week online STTP.

We kindly request that you grant permission for the same.

Thank you.

With regards,

Dr. Kamal Shah

Principal

St. John Technical and Educational Campus, Vevoor, Palghar (E), Dist. Palghar, Maharashtra - 401404.
Tel.: (02525) - 297275 / 79 **Fax:** (02525) - 256834 **Mob:** 7709177843 **Website:** www.sjcem.edu.in **Email:** office@sjcem.edu.in

To, Mechanical Account Lab

AF 8 A

Budget Settlement Form

Activity /Event Name: ISTE Approved STTP on Recent Treads in Renewable Energy Systems.

Estimated Expense Head (A)		
Particulars	**Amount (₹)**	**Remarks**
Resource Person	10000 /-	5 Experts x Rs. 2000 Per expert
ISTE STTP Approval Application Fee	1180 /-	For an event to be approved by ISTE, an application fee is required.
ISTE Membership Fee	2478 /-	21 Participants who are ISTE Members are required to pay the membership fees of Rs. 118 each for certification from ISTE.
Hospitality (Food/Refreshments)	--	
Transportation	--	
Miscellaneous	--	
Digital marketing	--	
Publisher Charges	--	
Total Estimated Expenses	**13658 /-**	

Estimated Income Head (B)		
Particulars	**Amount (₹)**	**Remarks**
Registration fee	22650/-	Registration Fee per participant is as follows' Rs.200 for SJCEM Participants. Rs. 250 for Outside Participants 72 SJCEM Participant x 200 = 14400 /- 33 Outside Participant x 250 = 8250/-
Sponsorship		
Total Estimated Income	**22650 /-**	

Estimated Revenue generation		
Particulars	Amount (₹)	Remarks
Total Estimated Expenses (A)	13658	
Total Estimated Income (B)	22650	
Estimated Revenue generation (B-A)	8992 /-	

Estimated Institute Share		
Institute Share		

Note: *As per the requirement no. of rows can be modified*

Prepared By	Checked By
Name & Dated Signature of Coordinator	Name & Dated Signature of HOD/Committee In-charge
06/01/26 Dr. S. B. Patwari.	

Approved By
Principal Signature

Date: 06/01/26

6 Jan 26 Received 8992

AF 6

REPORT

Details of Activity:

Name of the Activity	ISTE Approved STTP on Recent Treads in Renewable Energy Systems.		
Date & Time	08 to 13th December 2025.	**Department / Committee**	Mechanical Engineering Department
Venue	SJCEM,Palghar	**No. of Participants**	105
Nature of Activity	STTP	**Mode of Activity**	Online
Name of Activity In-charge	Dr. Jagdish Pawar Mr. Sangam Rane	**Name of Activity Coordinator**	Dr. Jagdish Pawar Mr. Sangam Rane
Name and Affiliation of Resource person	1.Dr. Hitesh Panchal Gujarat Technological University 2.Dr. Ramkishore Singh TERI School of Advanced Studies, New Delhi, India 3.Dr. Prashant Deshmukh SGGSIE&T, Nanded(MH),India 4.Dr. Sandeep Joshi Senior Scientific Officer, MGIRI, Govt. of India 5.Dr. Ganesh R. Chavhan Govt. College of Engineering, Chandrapur (MH),India		

Activity Information:

Objectives	Introduce fundamentals of renewable energy systems, Highlight recent trends and technologies, Promote sustainable energy solutions, Enhance practical and technical skills, Encourage research and innovation and Create awareness of policies and market trends
Target Audience	➢ Academician ➢ Research Scholars ➢ Industry persons ➢ UG & PG students ➢ Staffs/supporting staffs
Methodology	The STTP was conducted in **online mode** using interactive teaching–learning methods such as: • Expert lectures by academicians and industry professionals • Presentations on recent research trends and case studies • Discussions on real-time industrial applications • Interactive question-and-answer sessions • Exposure to policy frameworks and future research directions
Outcomes	• Understand fundamental concepts of renewable energy systems • Gain knowledge of recent advancements in solar thermal, photovoltaic, and other renewable technologies

	• Analyze practical challenges and solutions in renewable energy applications • Develop research-oriented thinking and identify potential research areas • Enhance awareness about government policies, sustainability goals, and energy markets • Strengthen industry–academia interaction

SWOT Analysis of the Event:

Strength	Weakness	Opportunity	Threats
Renowned and experienced resource persons Well-structured technical sessions Participation from academia, industry, and students	Online mode limited hands-on exposure Time constraints for in-depth discussions Internet connectivity issues for some participants	Scope for collaborative research and consultancy Encourages future STTPs and FDPs Enhances institutional reputation	Rapid technological changes require continuous updates Participant engagement may reduce in virtual mode Competition from similar online programs

Feedback Analysis:

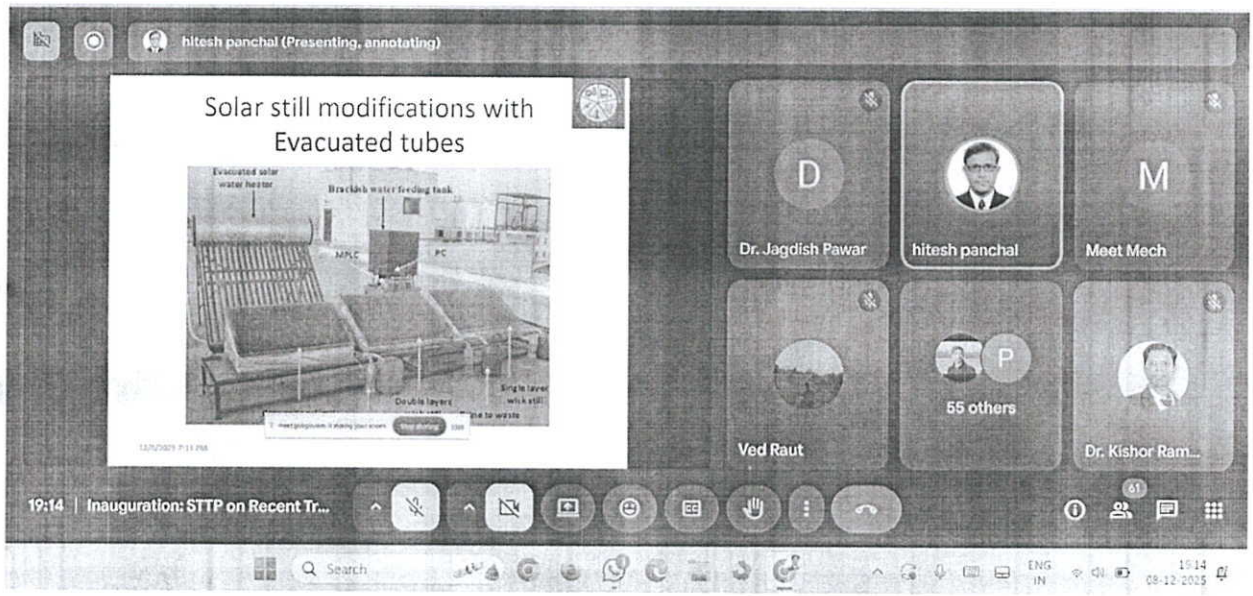
Feedback was collected from participants through an online feedback form.

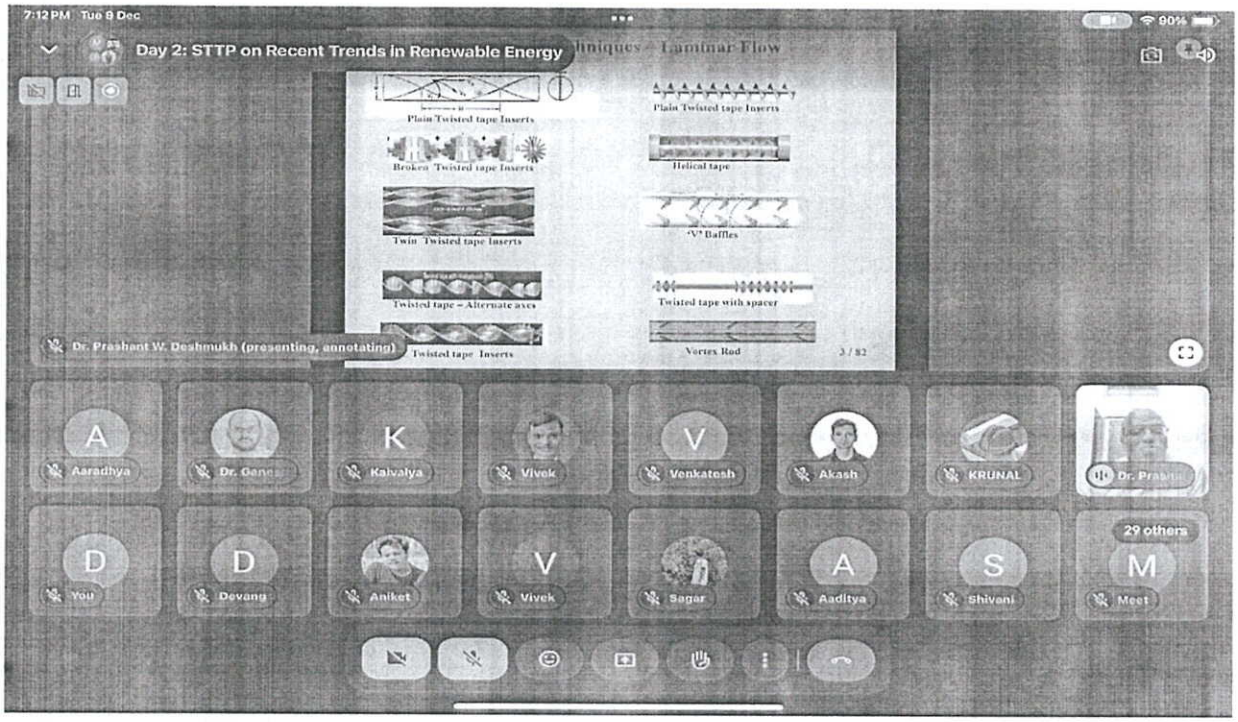
The feedback analysis indicated **high satisfaction levels** regarding:

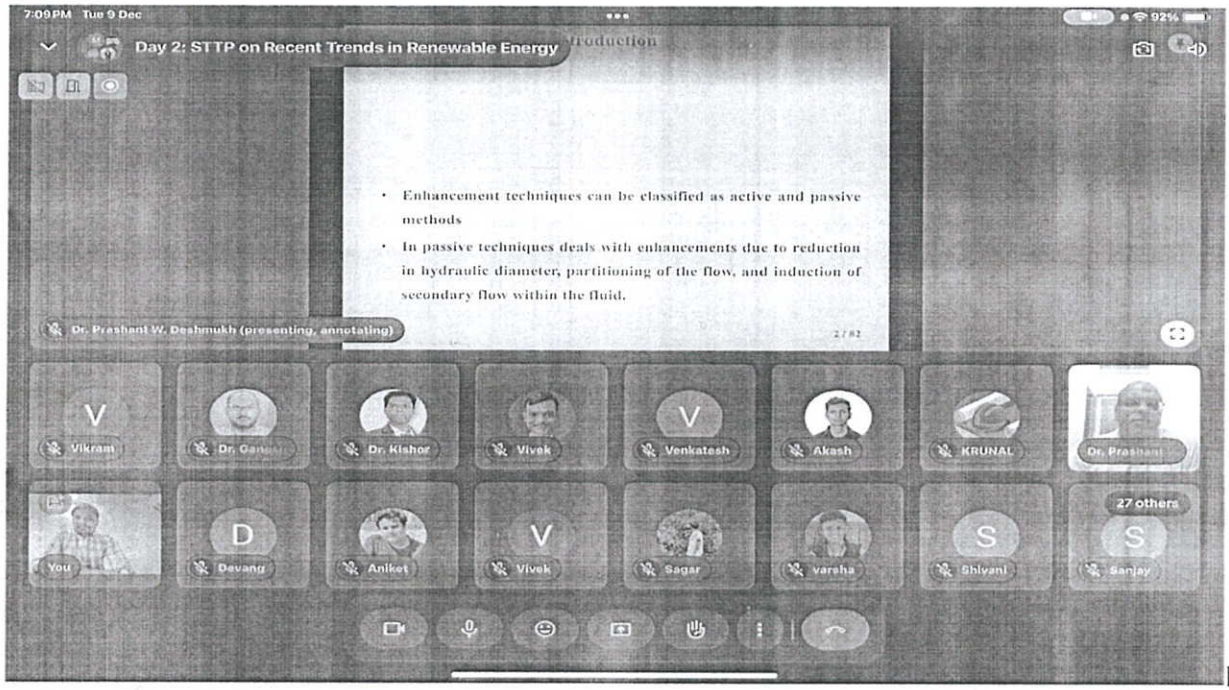
- Quality of resource persons
- Relevance of topics covered
- Overall organization of the programme

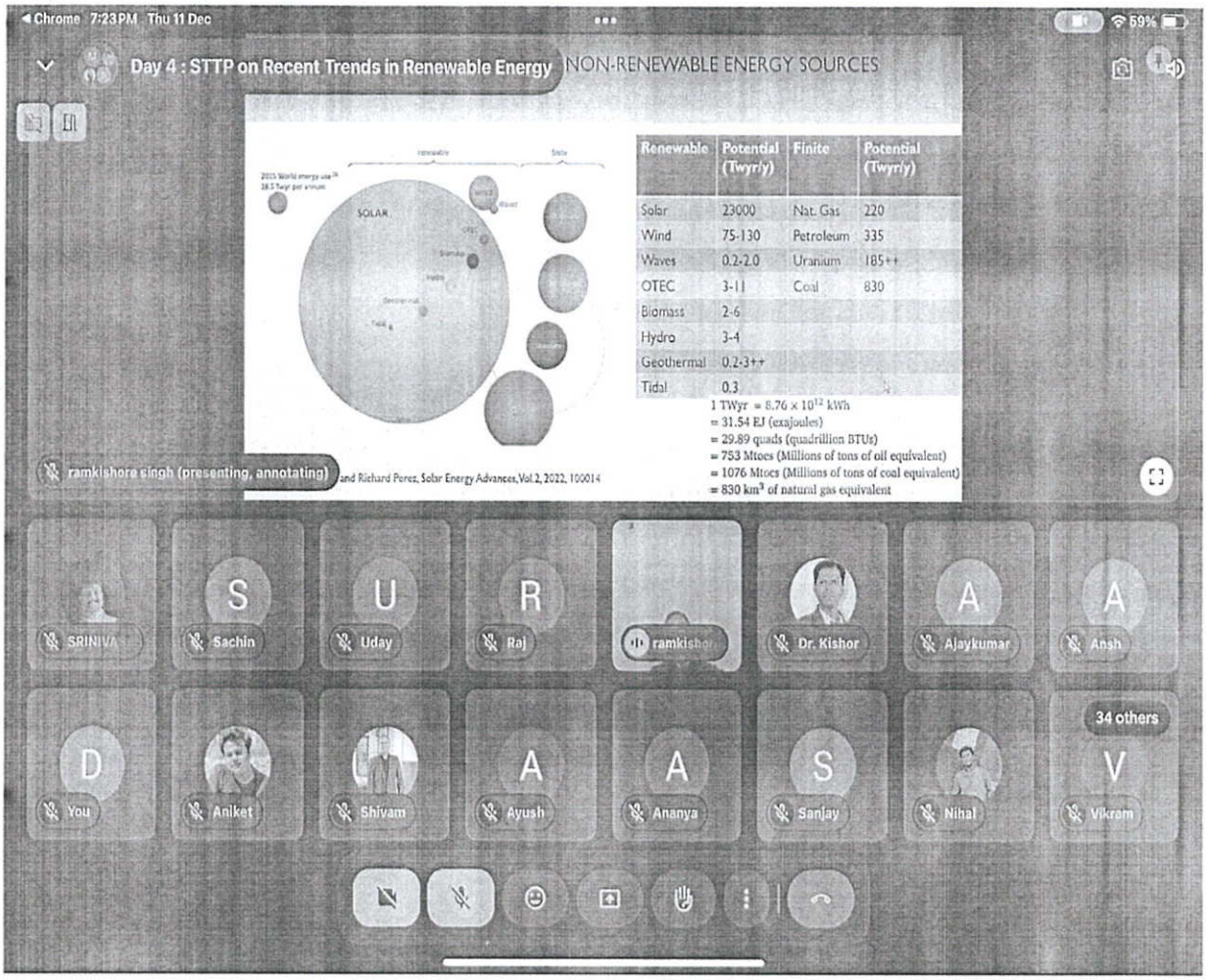
Most participants rated the programme as **Excellent / Very Good**.

Geo-Tagged Photo






7:09 PM Tue 9 Dec
92%
Day 2: STTP on Recent Trends in Renewable Energy
Introduction
Enhancement techniques can be classified as active and passive methods
In passive techniques deals with enhancements due to reduction in hydraulic diameter, partitioning of the flow, and induction of secondary flow within the fluid.
Dr. Prashant W. Deshmukh (presenting, annotating)
Vikram
Dr. Kishor
Vivek
Venkatesh
Akash
KRUNAL
Dr. Prashant
You
Devang
Aniket
Vivek
Sagar
varsha
Shivani
Sanjay
27 others


Chrome 7:23 PM Thu 11 Dec
69%
Day 4 : STTP on Recent Trends in Renewable Energy
NON-RENEWABLE ENERGY SOURCES
SOLAR
ramkishore singh (presenting, annotating)
and Richard Perez, Solar Energy Advances, Vol 2, 2022, 100014
Renewable | Potential (Twyr/y) | Finite | Potential (Twyr/y)
Solar 23000 | Nat. Gas 220
Wind 75-130 | Petroleum 335
Waves 0.2-2.0 | Uranium 185++
OTEC 3-11 | Coal 830
Biomass 2-6
Hydro 3-4
Geothermal 0.2-3++
Tidal 0.3
1 TWyr = 8.76 × 10^12 kWh
= 31.54 EJ (exajoules)
= 29.89 quads (quadrillion BTUs)
= 753 Mtoes (Millions of tons of oil equivalent)
= 1076 Mtoes (Millions of tons of coal equivalent)
= 830 km^3 of natural gas equivalent
SRINIVA
Sachin
Uday
Raj
ramkishor
Dr. Kishor
Ajaykumar
Ansh
You
Aniket
Shivam
Ayush
Ananya
Sanjay
Nihal
Vikram
34 others

CO, PO Mapping

CO Mapping

Sr. No.	Course Outcomes	Mapping Level (1 to 3)
CO1	Understand fundamentals of renewable energy systems	3
CO2	Analyze recent trends and technologies in renewable energy	3
CO3	Apply knowledge to identify sustainable energy solutions	2
CO4	Develop research and innovation skills in renewable energy	2

PO Mapping

Sr. No.	Program Outcomes	Mapping Level (1 to 3)
PO1	Engineering knowledge	3
PO7	Environment and sustainability	3
PO10	Communication	2
PO12	Life-long learning	3

Proofs & Documents Attached (Tick mark the proofs attached) :

	Notice / Brochure ✓		Feedback Analysis ✓
	Attendance list		News letter data for Spectrum
	Photos ✓		Media News Details
	Certificate ✓		CO, PO Mapping ✓
	Feedback Form		Any Other

Prepared By	Checked By
Name & Dated Signature of Coordinator	Name & Dated Signature of Committee In- charge
06/01/26 Dr. J.B. Sawas.	

Date of Activity: 08 to 13th December 2025.

Date of Report Submission: 06/01/2026

Reason for delay if any:

Approved By

HOD Signature