



SCHOOL OF ENERGY & ENVIRONMENT MANAGEMENT
(UNIVERSITY TEACHING DEPARTMENT)
RAJIV GANDHI PROUDYOGIKI VISWA VIDYALAYA
(State University of Technology of Madhya Pradesh)
Airport Road, Gandhi Nagar, Bhopal – 462033

Achievements/ Programme conducted by School of Energy & Environment Mangement,UTD, RGPV under the active guidance and leadership of Dr. Mukesh Pandey, Director, SoEEM, RGPV

Year - 2021

S.NO.	IMPORTANT PROGRAMMES/ ACTIVITIES	Link
1.	<p>Successfully conducted AICTE-ATAL sponsored one-week online FDP on “ENERGY ENGINEERING” from 08th February to 12th February 2021. This program was inaugurated by Prof. Sunil Kumar, Hon’ble Vice-Chancellor, RGPV, Regional Officer-AICTE and Program Coordinator Prof. Mukesh Pandey, Director, SOEEM, RGPV. The above FDP was attended by the 200 nos. of faculties/ research scholars across the country with a vision to empower faculty to achieve goals of Higher Education such as access, equity and quality.</p> <p>The resource person for this FDP on “ENERGY ENGINEERING” were:</p> <ul style="list-style-type: none">• Dr. Mohammad Rihan Prof., AMU, Aligarh, U.P• Prof. Shaibal K. Sarkar IIT, BOMBAY• Prof. Dibakar Rakshit IIT, DELHI• Prof. C.S. Malviya MITS, Gwalior• Dr. Abhijit Ray Prof., PDP, Gujarat• Dr. Vipin Kumar Tripathi NIT, AGARTALA• Prof. Anil Kumar DTU, DELHI• Prof. Dr. P. Muthukumar IIT, GUWAHATI• Mr. Ravi Kapoor CEO, Swathi Sun source Pvt. Ltd.• Dr. Sumit Tiwari	21.1

	<p>Shiv Nadar University, UP</p> <ul style="list-style-type: none"> • Dr. Prasant Baredar Chairman, Energy Centre, Bhopal • Dr. Sagar Agravat Head, R&D, L&T, Chennai • Prof. G.N. TIWARI IIT, DELHI 	
2.	<p>Successfully conducted AICTE-ATAL sponsored one-week online FDP on “Green Technology & Sustainability Engineering “from 15th to 19th March 2021. The inauguration was held on 15th March 2021 online at 11:00 am. Chief Guest of the program was Prof. Sunil Kumar (Vice-Chancellor, RGPV, Bhopal) Guest of Honour of the function was Adarsh Kumar Pandey (Sunway University Malaysia), Mr. C.S. Verma, CRO, AICTE, Bhopal Shri Surendra Bajpai, Chief Engineer, MP Urja Vikas Nigam Ltd. and other coordinators were also present with the participants.</p> <p>The above FDP was attended by the 200 nos. of faculties/ research scholars across the country with a vision to empower faculty to achieve goals of Higher Education such as access, equity and quality.</p> <p>The resource person for this FDP on “Green Technology & Sustainability Engineering” were:</p> <ul style="list-style-type: none"> • Dr. Adarsh K. Pandey Sunway University, Malaysia • Mr. Ravi Kapoor CEO Swati Sunsource Pvt Ltd. • Prof. Sanjay Agrawal, IGNOU, New Delhi • Prof. Arvind Kumar, IIT, Kanpur • Dr. Manish Kumar Rathod SVNIT Surat • Dr. Nitin Shrivastava UIT RGPV BHOPAL • Prof. Sukanta Dash, PDEU, Gujarat • Prof. Prof. Hitesh Panchal, GEC, Patan, • Prof. Dibakar Rakshit, IIT, Delhi • Prof. Rajat Saxena PDEU, Gujrarat • Dr. V.K. Sethi, 	21.2

	<p>DG, R&D, RKDF University, Bhopal</p> <ul style="list-style-type: none"> • Prof. Manoj Tripathy IIT,Roorkee • Prof Anil Kumar, DTU, Delhi • Prof. Manoj K. Gaur, MTS, Gwalior, M.P 	
3.	<p>Successfully completed TEQIP-III sponsored R&D project entitled: “Design and Development of Electric Car by Conversion of Old Car” on 31st March 2021 at SoEEM, RGPV with the Principle Investigators Dr. Mukesh Pandey, Director, SOEEM and Dr. Pankaj Jain, Assoc. Prof., SOEEM, RGPV.</p> <p>The Objective of this project is to make a feasible model of the electric conversion of old car into electric car. As work done and result shows that, electric conversion of old car is a much better option to utilise old cars rather scrapping them. Because scrapping a old car will lead to some carbon footprints left behind it, as energy will be required to scrap down the old car. Hence by converting an old car into electric has following benefits over scrapping old cars:</p> <ul style="list-style-type: none"> • Reduction in carbon footprints. • Running cost is very low as compared to IC engine cars. • Maintenance cost is very low. • Smooth driving experience with low vibrations. • No use of clutch, results in less hectic riding to the driver. • Reutilization of old cars. 	

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[Prof.(Dr.) Mukesh Pandey]
Director, SoEEM



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Year – 2020

S.NO.	IMPORTANT PROGRAMMES/ ACTIVITIES	Link
1.	Live Webinar on Tech-Talks on “E-Vehicle and its Adaptability challenges” on 13 th June 2020, to facilitate and enhance the knowledge of faculty, research Scholars and students during the COVID-19. The speaker of this program is Mr. Venugopal Shankar, Vice President, Mahindra Rise. This program was inaugurated by Prof. Sunil Kumar, Hon’ble Vice-Chancellor, RGPV and Prof. Mukesh Pandey, Director, SOEEM, RGPV.	20.1
2.	Successfully conducted online webinar/expert talk by Prof. C.S. Malvi, MITS, Gwalior on the title-Solar PV Thermal on 14/08/2020 to facilitate and enhance the knowledge of students during the COVID-19. This program was inaugurated by Prof. Sunil Kumar, Hon’ble Vice-Chancellor, RGPV and Prof. Mukesh Pandey, Director, SOEEM, RGPV.	20.2
3.	Submitted the proposal to establish Centre of Excellence of Solar Energy at SoEEM, RGPV on 19 th August, 2020 to Hon’ble Minister of New & Renewable Energy, GoI, New Delhi and DG, NISE, Gurugram as per the policy of MNRE and need of establishment for the state of M.P.	
4.	Successfully conducted online Workshop on “Renewable Energy” on the occasion of "Akshay Urja Diwas" on date 20 Aug 2020, Time at 11.30 AM by the invited speakers Dr. Arun Triphati, DG, NISE, Gurugram, Mr. Abhilakh Singh, Ex-GM,IREDA, Delhi, Mr. Anil Kumar, I/c Director R&D, MNRE, Delhi to facilitate and enhance the knowledge of faculty, research Scholars and students during the COVID-19. This program was inaugurated by Prof. Sunil Kumar, Hon’ble Vice-Chancellor, RGPV and Prof. Mukesh Pandey, Director, SOEEM, RGPV.	20.4

5.	<p>Successfully conducted online webinar on “Role of Technical Educational Institutions in Clean and Self-Reliant India” by the Key Note Speaker: Dr. Syed Asad Ali Warsi, Member, Apex Monitoring Committee for Solid Waste Management, New Delhi & Project Management Consultant to Indore Municipal Corporation on Date: 22nd August 2020 Time: 3.00 PM. to facilitate and enhance the knowledge of faculty, research Scholars and students during the COVID-19. This program was inaugurated by Prof. Sunil Kumar, Hon’ble Vice-Chancellor, RGPV and Prof. Mukesh Pandey, Director, SOEEM, RGPV.</p>	20.5
6.	<p>Successfully conducted online webinar on “Heat Transfer Studies of Medium Temperature Latent Heat Storage systems” by the Key Note Speaker: Prof. Dibakar Rakshit, IIT, Delhi on Date: 24th August 2020 Time: 11.00 AM. to facilitate and enhance the knowledge of faculty, research Scholars and students during the COVID-19. This program was inaugurated by Prof. Sunil Kumar, Hon’ble Vice-Chancellor, RGPV and Prof. Mukesh Pandey, Director, SOEEM, RGPV.</p>	20.6
7.	<p>Student excellence Learning Program (SELP) 5000 plus RGPV Students got benefited during May 2020- September 2020 under TEQIP-III at RGPV, Bhopal</p>	
8.	<p>UBA Cell, RGPV has celebrated Republic day (26th January 2020) by organizing various activities in adopted village dedicated to theme of “Swaccha Gram and Say No to Single Use Plastic Abhiyan” during Swacchata Pakhwada :-</p> <p>On the occasion of flag hosting ceremony at Govt. primary school children and villagers present taken oath of keeping the village and surrounding clean and discourage usage of polythene. To promote awareness on Swacchata a friendly cricket match was organised between Team of RGPV, Bhopal and Villages team at ground of Village Chandpur. Village team became the winner of the trophy.</p> <p>Govt. Primary School has been provided bench and desk for school children’s, sponsored by Lions Club Bhopal North.</p> <p>Say No to Single Use Plastic and Cleanliness drive was also organised. Janpad Panchayat office has now included the khejdadev panchayat also for Plastic Mukta Panchayat abhiyan. Oath of Gram Swacchata was taken by village people during a</p>	

	social and religious event as well. Dr. Savita Vyas, Coordinator, UBA Cell Professor, SoEEM RGPV, Bhopal.	
9.	Awareness campaign door to door for “Gram Swacchata” and “Plastic Mukta Gram” (Say No to Single Use Plastic), Village Chandpur, District: Bhopal-MP: - 22 February 2020. Dr. Savita Vyas, Coordinator, UBA Cell Professor, SoEEM RGPV, Bhopal.	
10.	<p>A continuous effort since last two month has started showing the results. Now villagers have started using Pattal-Dona bio-degradable items during social events instead of plastic materials. On the occasion of Mahashivratri , village Bhandara social event was organised at village Chandpur . RGPV-UBA Cell also witnessed the event.</p> <p>People of the all the four villages of Khejadaedv Panchayat along with other adjacent panchayat were present. RGPV UBA team appreciated the support of the people for the Plastic Mukta Gram Abhiyan and motivated all present. On the occasion representative from various organization were also present. Dr. Savita Vyas, Coordinator, UBA Cell Professor, SoEEM RGPV, Bhopal.</p>	
11.	Awareness for Social distancing, Sanitization and distribution of Mask in adopted Villages under UBA Cell, RGPV, Bhopal: April –May 2020. Dr. Savita Vyas, Coordinator, UBA Cell Professor, SoEEM RGPV, Bhopal.	
12.	Plantation in adopted Villages of Amala, Neem, Mango, Jamun, Ashok plants - July 2020. Dr. Savita Vyas, Coordinator, UBA Cell Professor, SoEEM RGPV, Bhopal.	
13.	“Swasthya Parikshan Shivir evam Poudharopan” under Unnat Bharat Abhiyan, Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal at Gram- Khejadadev Block- Fanda, on 17th September 2020. Dr. Savita Vyas, Coordinator, UBA Cell Professor, SoEEM RGPV, Bhopal.	
14.	On the occasion of World Environment Day , first online AICTE-RGPV TTP on “Climate Change: Science, Impacts & Mitigation Strategies” during 5th – 9th June 2020 organized by School of Energy & Environment Management (SoEEM), RGPV , Bhopal in association with State Knowledge Management Centre on Climate Change, EPCO, Environment Department, GoMP for the faculty of RGPV affiliated institutions. 70 faculty members participated in the TTP.	

	Program Coordinator: Dr. Savita Vyas, Professor, SoEEM, RGPV and Shri Lokendra Thakkar, SKMCCC, EPCO, Bhopal.	
18.	“World Environment Day-2020” Celebration at RGPV campus on 06th June 2020. Plantation program by Prof. Sunil Kumar, Hon’ble Vice Chancellor, RGPV, TEQIP I/C Prof. S.C. Choube, Director, SOEEM Prof. Mukesh Pandey, Coordinator GE club Prof. Pankaj Jain, RGPV.	
19.	“Akshay Urja Diwas-2020” celebration on 20th August 2020, by Green Energy Club, Coordinator, Dr. Pankaj Jain, Assoc. Prof. SoEEM and MPUVN-BEE Coordinator Dr. Mukesh Pandey.	
20.	Organised a webinar on “NEW EDUCATION POLICY: 2020 - A Road Map for Technical Education” under Online AICTE-RGPV Teachers Training Program delivered by Prof. Sunil Kumar, Vice Chancellor, RGPV, Bhopal organized by Unnat Bharat Abhiyan (UBA) Cell, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal under TEQIP-III on 23rd September 2020. Coordinated by, Dr. Savita Vyas, Coordinator, UBA Cell & Professor, SoEEM, RGPV, Bhopal. Attended by 250 participants across the country including directors, principals, Faculty and students of RGPV.	
21.	Organised a webinar for Environmental Conservation under TEQIP III, “Role of Technical Educational Institutions in Clean and Self-Reliant India”, delivered by Dr. Syed Asad Ali Warsi (Member, Apex Monitoring Committee for Solid Waste Management, New Delhi & Project Management Consultant to Indore Municipal Corporation.), on 22nd August 2020, organized by School of Energy & Environment Management, Unnat Bharat Abhiyan (UBA) Cell, RGPV, Shri G. S. Institute of Technology and Science, Indore & Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal. Attended by 450 faculty and students. Coordinated by, Dr. Savita Vyas, Professor, SoEEM, RGPV, Bhopal.	
22.	Organized expert talk for M.Tech Energy Technology students of School of Energy & Environment Management, RGPV Bhopal on Date: 19th September 2020, Topic - Waste Management in Thermal Power Plant with Respect to Ash. Speaker, Dr. Anand S Verma, Lucknow, Retire NTPCian, under Online AICTE-RGPV Teachers Training Program.	
23.	Student Excellence & Learning Program (SELP) conducted under TEQIP-III during May, June, July, August 2020. RGPV, Bhopal organized online Art of Living’s -Student Excellence & Learning Program (SELP) for students of affiliated Institutions	

<p>under TEQIP-III in the month of May, June, July, August 2020. SELP program is a World Bank sponsored program, which is exclusively designed in order to improve students learning. The objective of the workshop was to develop personality, eliminate mental stress and improve the physical health of students.</p>	
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**[Prof.(Dr.) Mukesh Pandey]
Director, SoEEM**



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Year - 2019

S.NO.	IMPORTANT PROGRAMMES/ ACTIVITIES	Link
1.	<p>International Conference on “Renewable Energy - Innovation, Research and Applications” (IC-REIRA-2019)”, held on December 27th - 28th, 2019.</p> <p><i>[Following were the speakers in the above conference:-</i></p> <ul style="list-style-type: none"><i>• Prof. V.K. Sharma, Italian National Agency for New Tech., Italy</i><i>• Prof. G. N. Tiwari, Ex.Prof., IIT,Dehli</i><i>• Prof. Babu Allapat, IIT, New Delhi</i><i>• Prof. Dibakar Rakshit, IIT, New Delhi</i><i>• Prof. A.Mani, IIT, Chennai</i><i>• Prof. Anil Kumar, DTU, Delhi</i><i>• Prof. Avanish Dubey, NIT, Allahabad</i><i>• Prof. (Dr.) Prashant Baredar, Chairman Energy Center, MANIT, Bhopal</i><i>• Prof. A. Jayalaxmi, JNTU, Hyderabad</i><i>• Prof. C.S. Malviya, MITS, Gwalior</i><i>• Prof. Manoj Gaur, MITS, Gwalior</i>	19.1
2.	<p>“Energy Conservation -Best Practices Competitions on The Occasion of World Energy Conservation Day 2019 Celebration” held on December 17th, 2019</p> <p><i>[Award winning ceremony on the occasion of World Energy Conservation Day 2019 Celebration for the poster/painting competition and the use of Best Practices Energy Conservation sources in the affiliated institutes of RGPV in the State of M.P.]</i></p>	19.2
3.	<p>“Academic Interaction with International Solar Alliance Fellows” held on December 11th, 2019.</p> <p><i>[Fellows of International Solar Alliance-ISA countries like Uganda, south Africa, Malaysia , kajakisthan etc. were visited RGPV specially Energy Deptt. /Energy Park /CL-CSP plant for Academic Interaction and live</i></p>	

	<i>demonstration of latest renewable energy technologies.]</i>	
4.	<p>One weeks Training Programme on “Capacity Building Training on Energy Modelling and Energy Planning”, sponsored by TEQIP-III , organized in RGPV, Bhopal, Nov. 14-18,2019</p> <p><i>[Selected 70 nos. of participants have got training on Technical skill and capacity building of the university in energy systems optimization modelling, planning and policy making with effective implementation of the same within the State and developing the State Energy Plan (EP) & Energy Action Plan (EAP) documents for the State Government and also to add mainstreaming EAP in the State Energy Planning]</i></p>	19.4
5.	<p>MPUVN-BEE PROGRAMME for inclusion of energy related subjects in the curriculum and establishment of Green Energy Clubs in technical institutions 2019.</p> <p><i>[Activities under the Bureau of Energy Efficiency:-Energy Conservation measures, Formation of Green Energy Club in the State of MP August 2019 and addition of Energy Conservation topics in the syllabus of BE/MTech/ITI etc.]</i></p>	
6.	<p>Invited Industrial Expert Talk & Interaction on “Renewable Energy: Industry Perspective (Viable Energy Solution)” by Mr. Ravi Kapoor, CEO, Swathi SunSource Power Pvt. Ltd., Mumbai, August 01st, 2019, Organized by: School of Energy & Environment Management.</p> <p><i>[Expert talk covers new technologies like 24X7solar thermal storage as well as E-mobility specially design and development of E-Bus,E-Cars etc.]</i></p>	19.6
7.	<p>Two weeks Training Programme on” Solar Roof Top Grid Engineers Course” ,sponsored by National Institute of Solar Energy (NISE),New Delhi ,organized at SoEEM, RGPV, Bhopal from March 27-April 5,2019</p> <p><i>[The National Institute of Solar Energy (NISE), an autonomous institution of Ministry of New and Renewable Energy (MNRE), is the apex National R&D institution in the field of Solar Energy. NISE is organizing “Solar Roof Top Grid Engineers Course” skill development programmes in collaboration with academic institutions at various locations across the country and our department SOEEM, RGPV have got this opportunity to carry out this training program.</i></p> <p><i>The programme aims to develop the skills of youth, considering the opportunities for employment in the growing Solar Energy Power project’s installation, operation & maintenance in India and abroad. This</i></p>	19.7

	<i>Programme is also designed to prepare the candidates to become new entrepreneurs in Solar Energy sector. The “Solar Roof Top Grid Engineers Course” are sponsored by Ministry of New & Renewable Energy, Government of India.]</i>	
8.	<p>One day Industrial Visit at “15 MW Grid connected Solar Power Plant” at Icchawar, Dist. Sehore, M.P. on April 03, 2019</p> <p><i>[The main objective of the visit was to be familiar with industrial environment and to get practical knowledge of electrical power generation through renewable energy sources. Students of first and second year accompanied by a team of faculties were the prime beneficiaries of this visit.]</i></p>	
9.	<p>One day TEQIP –III sponsored International Expert Lecture cum interaction on “Solar Energy(CSP) and Energy storage” by Dr Jeff Cumpston PhD (ANU, Australia) Post Doc , Germany, organized by SOEEM,RGPV ,Bhopal ,March 19,2019.</p> <p><i>[International Expert talk by Dr Jeff Cumpston covers new technology Solar Energy (CSP) and Energy storage for thermal application]</i></p>	19.9
10.	<p>One day Industrial Visit at OMEGA Rank “01MW Solar Power Tracking Plant” at Bhopal on , March 19, 2019</p> <p><i>[The main objective of the visit was to be familiar with industrial environment and to get practical knowledge of electrical power generation through renewable energy sources. Students of first and second year accompanied by a team of faculties were the prime beneficiaries of this visit.]</i></p>	19.10
11.	<p>Two weeks Training Programme on” Solar Roof Top Grid Engineers Course” ,sponsored by National Institute of Solar Energy(NISE) ,New Delhi ,organized at SoEEM, RGPV,Bhopal, March 27-April 5,2019</p> <p><i>[The National Institute of Solar Energy (NISE), an autonomous institution of Ministry of New and Renewable Energy (MNRE), is the apex National R&D institution in the field of Solar Energy. NISE is organizing “Solar Roof Top Grid Engineers Course” skill development programmes in collaboration with academic institutions at various locations across the country and our department SOEEM,RGPV have got this opportunity to carry out this training program.</i></p> <p><i>The programme aims to develop the skills of youth, considering the opportunities for employment in the growing Solar Energy Power project’s installation, operation & maintenance in India and abroad. This Programme is also designed to prepare the candidates to become new entrepreneurs in Solar Energy sector. The “Solar Roof Top Grid</i></p>	19.11

	<i>Engineers Course” are sponsored by Ministry of New & Renewable Energy, Government of India.]</i>	
12.	<p>Two days International Conference on “Advance Technologies in Renewable energy For future sustainability ATREFS -2019”, organized by SOEEM,RGPV ,Bhopal , under TEQIP-III on January, 30th -31st, 2019</p> <p><u>[Following were the speakers in the above conference:-</u></p> <ul style="list-style-type: none"> • <i>Prof. (Dr.) Bernhard K. Glick, Brandenburg Technological University, Germany,</i> • <i>Prof. (Dr.) Helmut Glock, University of Applied Sciences, MANNHEIM , Germany</i> • <i>Prof. (Dr.) Siegfried Dickhoven, National Research Center for Information Technology, Germany</i> • <i>Dr. Rajesh Katyal ,Addl. Director General , National Institute of Wind Energy, Chennai</i> • <i>Prof. B. Allapat IIT, Delhi</i> • <i>Mr. Srikant Deshmukh, SE,MPUVNL, Bhopal</i> • <i>Mr. Prashant Thakkar, Adani (Mundra) Solar Pvt .Ltd., Gujarat(Expert from Industry)</i> • <i>Prof A. Mani, IIT, Chennai</i> • <i>Prof. G.N.Tiwari, Ex-Prof.,IIT Delhi</i> • <i>Mr. Deepak Gadhia, Chairman, Sunrise CSP Pvt. Ltd., India (Expert from Industry)</i> • <i>Dr. Anil Kumar, MNRE, New Delhi</i> • <i>Prof.(Dr.) Prashant Baredar, Chairman Energy Center, MANIT, Bhopal</i> • <i>Dr.V.K.Sethi,Vice-Chancellor, RKDF University,Bhopal</i> • <i>Dr. Anil Dubey, Sr.Scientist, ICAR, Bhopal</i> • <i>Dr. Naveen Kumar, Delhi Technical University, New Delhi]</i> 	19.12
13.	<p>Work start for installation and deployment of 01 MW Grid connected Solar Photovoltaic Rooftop Power plant under "RESCO" Model at RGPV campus in the month of Jan.2019 after Signing the PPA with MP Urja Vikas Nigam Ltd. with reference to RFP issued and the letter of Principal Secretary, New & Renewable Energy Department, Government of M.P, Bhopal vide letter No. 321/2116 dt.25/10/2018. M/S Mundra Solar Pvt. Limited, Ahmadabad, Gujarat is the developer of this SPV plant.</p> <p>First phase of 490 kWp SPV RESCO model was installed at RGPV.</p> <p><u>490 kWp RESCO Model Solar Power Plant System-** Plants Details **</u></p> <p>No of Module (325 Wp) : 1504 Nos.</p> <p>Total DC Capacity (kWp) : 488.8 kWp</p> <p>Total AC Capacity (kW) : 490 kW</p>	19.13

Inverter Rating (kW)	: 4X60 KW , 5X50 KW.	
Cumulative Solar Capacity	: 490 kW	
Type of Connection	: HT-33KV	
Connection Service Number	: 4234904111	
Geographical Coordinates	: 23.3103 N, 77.3619 E	
PPA Tarrif Rate / KWH	: Rs.1.90/-	
Nodal Agency (M.P Gov.)	: M.P. Urja Vikas Nigam Limited	
Plant Developer	: Mundra Solar PV Ltd (Adani Solar)	

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Year - 2018

S.NO.	IMPORTANT PROGRAMMES/ ACTIVITIES	Link
1.	<p>Successfully conducted FDP on “Application of Green Energy Technologies for Environmental Sustainability” from 3rd -7th April 2018.</p> <p><i>This program was inaugurated by Hon’ble Vice-Chancellor, RGPV, and FDP Coordinator Prof. Mukesh Pandey, Director, SOEEM, RGPV. The above FDP was attended by the 110 nos. of faculties/ research scholars across the country with a vision to empower faculty to achieve goals of Higher Education such as access, equity and quality.</i></p>	18.1
2.	<p>International Round Table Conference on CSP & PV for cost effective Solar Power under TEQIP-III as General Chair on 28 March 2018 at RGPV.</p> <p><i>RGPV (Rajiv Gandhi Technical University in Madhya Pradesh) and Tokyo Institute of technology, Japan was organized an International Round table on "PV and CSP for Cost-Effective Solar Power" at RGPV, Bhopal, India on 28th march 2018 under TEQIP-III programme.</i></p> <p><i>An discussion on the solar power technology (PV and CSP) for cost-effective solar power generation. The technologies are rising ones which will be practically applied for in the next several years or already applied very recently.</i></p> <p><i>The detail agenda of Round table are following.</i></p> <ol style="list-style-type: none"><i>1. Development of solar thermal technology in India.</i><i>2. Strengthen the relationship between India and Japan for development</i>	18.2

	<p><i>of CSP.</i></p> <p><i>3. Next step of CL CSP project including its linear cavity receiver</i></p> <p><i>4. Majors has to be taken to make CST for industrial process use.</i></p> <p><i>5. Integration of storage technology with CL CSP technology.</i></p> <p><i>6. How solar thermal can contribute in development of rural India as well as for green energy economic.</i></p>	
3.	<p>Expert talk on “Method and Comparisons of Solar Thermal Collection Systems – Parabolic, Fresnel, Tower” by Mr. John M Jacob on 26th Feb 2018</p> <p><i>Expert talk by Mr. John M Jacob covers new technology Solar thermal Energy for thermal applications</i></p>	
4.	<p>Successfully conducted workshop on “ECBC – Energy Efficient Future for building” was organized on 28th Feb 2018.</p> <p><i>The purpose of ECBC is to provide minimum requirements for the energy-efficient design and construction of buildings.</i></p> <p><i>ECBC prescribes standards for:</i></p> <ul style="list-style-type: none"> <i>· Building Envelope (Walls, Roofs, Windows), Lighting (Indoor and Outdoor)</i> <i>· Heating Ventilation and Air Conditioning (HVAC) System</i> <i>· Solar Hot Water Heating & Electrical System</i> 	18.4
5.	Established Renewable Energy Resource Lab under TEQIP-III	18.5

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Year - 2017

S.NO	IMPORTANT PROGRAMMES/ ACTIVITIES	Link
1.	<p>A Three Days Training Programme on “Solar Photovoltaic” was organized from 21st-23rd Nov., 2017 for 50 nos.PG students at School of Energy & Environment Management, RGPV, Bhopal in which a team of Certified Trainers, professors and researchers had deliberated on the subject. This program was granted from the DTE, Bhopal vide letter no./5/p/A-26-semi./2017/1548/Bhopal,dated 11/10/2017.</p> <p><i>For the above training programme Dr. Deepak Gadhia, Chief Mentor, EnerSun Power Tech P. Ltd ,Vadodara, Gujarat and Mr.Rama Siva, Founder, Anthro Power, New Delhi had also deliver Expert lectures in this Solar Training Programme.</i></p>	17.1
2.	<p>School of Energy and Environment Management (SoEEM), Rajiv Gandhi Technological University (RGPV), Bhopal has organized a Two Days International Conference on “Recent Trend in Energy Storage and Hydrogen Energy” in collaboration with the Tokyo Institute of Technology (TIT), Japan on 28th-29th April 2017.</p> <p><i>The objective of the Seminar is to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of Energy Storage and Conversion. It also provides a premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields</i></p>	17.2

	<p><i>of Energy Storage and Conversion. More than 10 expert speakers from Japan, Switzerland etc. and also from the different links of the Renewable Energy value chain from around the globe are invited to share their experiences, insights and expectations to address a focused audience of around 250 Professionals, Faculties, and Students.</i></p> <p><i>The eminent speakers of the conference are:-</i></p> <p><i>PROF (DR.) YUKATA TAMAURA, Japan</i></p> <p><i>PROF (DR.) HIROSHIGE KIKURA, Japan</i></p> <p><i>DR. GIW ZANGANESH, Newzeland</i></p> <p><i>MR. SRIKANT DESHMUKH, MPUVNL</i></p> <p><i>MR. ANIL KUMAR, SCIENTIST, MNRE</i></p> <p><i>MR. M. R. NAUNI, SCIENTIST, MNRE</i></p> <p><i>DR. KENTARO KANATANI, Japan</i></p> <p><i>PROF (DR.) V. K SETHI, RKDF</i></p> <p><i>DR. LOKENDRA TAKKAR, EPCO</i></p> <p><i>PROF (DR.) PRABHAKER TIWARI, GIT, Noida</i></p> <p><i>PROF (DR.) PRABHAKER TIWARI</i></p> <p><i>MR. YOSHUNOBU KATO, Japan</i></p>	
3.	<p>Conducted an Expert lecture by Dr. Akash Davda, Scientist E-2 and Head-Renewable Trainings, Renewable Energy, Environment and Energy Efficiency Research Wing, GERMI, Gujarat on 06th Sep., 2017.</p> <p><i>This lecture was attended by UG, PG and PhD. students as well as faculty members.</i></p>	
4.	<p>School of energy & environment management has organized an expert invited lecture on “Global Environmental Issues and Climate Change”. By Renowned environment expert Shri Lokendra Thakkar, General Manager, MP CDM & Coordinator, State Knowledge Management Centre on Climate Change, EPCO, Govt. of M.P. Bhopal on 11th Sep.2017.</p> <p><i>This lecture was attended by UG, PG and PhD. students as well as faculty members.</i></p>	17.4

5.	Conducted Expert lecture delivered on Solar Thermal by Dr. Abdul Khaliq, Professor, King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia on 17th Nov. 2017. <i>This lecture was attended by UG, PG and Ph.D. Students of RGPV and the affiliated colleges of RGPV as well as faculty members.</i>	17.5
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[Prof.(Dr.) Mukesh Pandey]
Director, SoEEM



SCHOOL OF ENERGY & ENVIRONMENT MANAGEMENT
(UNIVERSITY TEACHING DEPARTMENT)
RAJIV GANDHI PROUDYOGIKI VISWA VIDYALAYA
(State University of Technology of Madhya Pradesh)
Airport Road, Gandhi Nagar, Bhopal – 462033

Achievements/ Programme conducted by School of Energy & Environment Mangement,UTD, RGPV under the active guidance and leadership of Dr. Mukesh Pandey, Director, SoEEM, RGPV

Year - 2016

S.NO	IMPORTANT PROGRAMMES/ ACTIVITIES	Link
1.	<p>Implementation and Installation of Project Title: - R&D Project on “30 kWt Thermal Cross Linear CSP system test unit” vide MNRE Sanction order No & date: - 15/09/2012-13/ST Dated: 07 Feb 2014 was started in the year 2016 and experimental data was taken. The PI of this project is Prof. (Dr.) Mukesh Pandey, Dean & Head, Energy Technology, RGPV, Bhopal</p> <p><u><i>-: Annual Report of CL-CSP Project: -</i></u></p> <p><i>The CL-CSP project is Technology based attempt by a consortium of University and Industries from India (RGPV, MNRE –GOI, BERGEN) and Japan (Toyo Engineering Corporation & Solar flame Corporation).This project aims at the proof on the principle of the cross linear concentration (CL) concept which has been invented and conceptualized by Prof. Yutaka Tamaura, Emeritus Professor, Tokyo Institute of Technology and Representing Director of Solar Flame Corporation. Also, it aims that a new advanced technology on the CSP can activate the solar energy economy and enhances the employment in India with a mass production of the CL-CSP components in India. The CL-CSP plant components for the solar field are small which can be easily produced by Indian small production factories. This project is the India/Japan international collaborative project to facilitate the solar energy development, also this project includes the academic education,training & skill development program to grow the students, faculties and Ph.D. research scholars experts and trained the Manpower for the CSP plant operation, construction and maintenance for the next</i></p>	16.1

generation.

1. Project Title:- R&D Project on “30 kWt Thermal Cross Linear CSP system test unit”

2. MNRE Sanction order No & date:- 15/09/2012-13/ST Dated: 07 Feb 2014

3. Name and complete address of PI: Prof. (Dr.) Mukesh Pandey, Dean & Head, Energy Technology, RGPV, Bhopal

4. Name and complete address of Co-PI from other participating institution:

- Prof. Yukata Tamaura , Prof. Emeritus Tokyo Institute of Technology, Tokyo, Japan & Representative Director, Solar Flame Cooperation
- Mr. Rajendar Kaura, CMD, Bergen Group, Gurgaon
- Dr. V.K Sethi, Ex-Director, UIT,RGPV,Bhopal, M.P.

5. Other Members from RGSTP:

- Dr. Pankaj Jain: Project Co-Ordinator (1)
- Dr. Anurag Gour: Project Co-Ordinator (2)
- Prashant Mishra: Project Manager
- Himanshu Bora: Project Engineer

6. Date of start of the project and scheduled completion date:- April 2014 to Feb.2017

7. Approved project budget: - Rs. 9.70 Crores MNRE share: Rs. 2, 23, 66,312/-

8. Objectives of the Project: - Setting up a test unit of 30kWt Cross Linear CSP System at RGPV, Bhopal with the following objectives:

- a) Demonstrate high temperature ($\geq 6000\text{C}$) attainment from CL-CSP.
- b) Optimize simulation technology of CL-CSP.
- c) Utilize to develop IMWe plant.
- d) Development of road map to bring down the tariff based on this

	<p><i>technology to be competitive to solar PV plants considering scaling up and indigenization aspects of the technology.</i></p> <p><i>RGPV started a R&D project on a path breaking and innovative solar thermal technology with the International collaboration. This Technology is known as Cross linear CSP (CL-CSP) and this technology is amalgamation of two exiting solar thermal technology ie. Linear Fresnel and solar Tower. CL-CSP has virtues of both conventional Linear Fresnel and Tower technologies. In this innovative and breakthrough CL-CSP technology temperature of 600 degree c will be achieved by concentrating solar DNI. The Heliostat used in this new technology is gyro type with E-W and N-S tracking facility, which is first time manufactured in world wide. The power consumption for operational of this tracking mechanism is very less. The heliostat is very cost effective with reflective efficiency of 95% and weight 90 kg with approx. 3.5 m2 area as compare with conventional heliostat and air is being used as a heat transfer medium in the solar air receiver which can further can be utilized to generate steam. This Technology may be substitution of coal for existing Thermal Power Plants during the day Time. As the Thermal to Thermal Conversation efficiency is 80%. This can also replace Fossil Fuels in Factories/industries and use for Hybrid Technology for CSP Plants. The construction & installation of the plant is already started and the commissioning & testing was also started.</i></p>	
2.	<p>Expert lecture was delivered by Prof. Surendra S. Kachhwaha, Head, Mechanical Engineering, Pandit Deendayal Petroleum University (PDPU), Gandhinagar on April 11, 2016 at 11:30 AM. on "SOLAR THERMAL ENERGY".</p> <p><i>This lecture was attended by UG, PG and PhD. students as well as faculty members.</i></p>	

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Year - 2015

S.NO	IMPORTANT PROGRAMMES/ ACTIVITIES	Link
1.	<p>Start of the work for Implementation and Installation of Project Title: - R&D Project on “30 kWt Thermal Cross Linear CSP system test unit” vide MNRE Sanction order No & date: - 15/09/2012-13/ST Dated: 07 Feb 2014 was started in the year 2015 and civil work was completed. The PI of this project is Prof. (Dr.) Mukesh Pandey, Dean & Head, Energy Technology, RGPV, Bhopal</p> <p><u><i>-: Annual Report of CL-CSP Project: -</i></u></p> <p><i>The CL-CSP project is Technology based attempt by a consortium of University and Industries from India (RGPV, MNRE –GOI, BERGEN) and Japan (Toyo Engineering Corporation & Solar flame Corporation).This project aims at the proof on the principle of the cross linear concentration (CL) concept which has been invented and conceptualized by Prof. Yutaka Tamaura, Emeritus Professor, Tokyo Institute of Technology and Representing Director of Solar Flame Corporation. Also, it aims that a new advanced technology on the CSP can activate the solar energy economy and enhances the employment in India with a mass production of the CL-CSP components in India. The CL-CSP plant components for the solar field are small which can be easily produced by Indian small production factories. This project is the India/Japan international collaborative project to facilitate the solar energy development, also this project includes the academic education,training & skill development program to grow the students, faculties and Ph.D. research scholars experts and trained the Manpower for the CSP plant operation, construction and maintenance for the next</i></p>	15.1

generation.

1. Project Title:- R&D Project on “30 kWt Thermal Cross Linear CSP system test unit”

2. MNRE Sanction order No & date:- 15/09/2012-13/ST Dated: 07 Feb 2014

3. Name and complete address of PI: Prof. (Dr.) Mukesh Pandey, Dean & Head, Energy Technology, RGPV, Bhopal

4. Name and complete address of Co-PI from other participating institution:

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	<p><i>technology to be competitive to solar PV plants considering scaling up and indigenization aspects of the technology.</i></p> <p><i>RGPV started a R&D project on a path breaking and innovative solar thermal technology with the International collaboration. This Technology is known as Cross linear CSP (CL-CSP) and this technology is amalgamation of two exiting solar thermal technology ie. Linear Fresnel and solar Tower. CL-CSP has virtues of both conventional Linear Fresnel and Tower technologies. In this innovative and breakthrough CL-CSP technology temperature of 600 degree c will be achieved by concentrating solar DNI. The Heliostat used in this new technology is gyro type with E-W and N-S tracking facility, which is first time manufactured in world wide. The power consumption for operational of this tracking mechanism is very less. The heliostat is very cost effective with reflective efficiency of 95% and weight 90 kg with approx. 3.5 m2 area as compare with conventional heliostat and air is being used as a heat transfer medium in the solar air receiver which can further can be utilized to generate steam. This Technology may be substitution of coal for existing Thermal Power Plants during the day Time. As the Thermal to Thermal Conversation efficiency is 80%. This can also replace Fossil Fuels in Factories/industries and use for Hybrid Technology for CSP Plants. The construction & installation of the plant is already started and the commissioning & testing will be started from March-2016.</i></p>	
2.	<p>Expert lecture was delivered by Dr. BISWAJIT GHOSH, Professor & Director, Energy Science & Technology, Jadavpur University, Kolkata on 10th August, 2015 at 11:30 AM. on "ENERGY TECHNOLOGY FOR TOMORROW" .</p> <p><i>This lecture was attended by UG, PG and PhD. students as well as faculty members.</i></p>	
3.	<p>AICTE has sanctioned a RPS Project entitled "Enhanced Power Performance of Horizontal axis Wind Turbine (HAWT) using optimal wind turbine with dual Rotor" to School of Energy & Environment Management, RGPV, Bhopal with the Principal Investigator Dr. Mukesh Pandey and Co- Principal Investigator Er. Anurag Gour . This R&D project is successfully installed, commissioned & testing and data analysis was done at Energy Park of RGPV.</p>	15.3

A 2 kW Dual Rotor Wind Turbine is installed and field test at Energy park of RGPV Bhopal has been completed. Theoretically, only 59.3% of total energy in column of air can be extracted. This limit is referred to as the Betz limit. For Dual rotor system theoretically the Betz limit is increased up to 64%. The preliminary test result shows that the power production is increased by better than 40 to 45% whereas conventional single rotor wind turbine converts approx. 25-29 % of power production. After maturity of this innovative and breakthrough technology, the same has to be commercialized which can lead to huge remarkable business in India and worldwide in the field of Renewable Energy.

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