

GREEN JOBS NEWSLETTER

ISSUE 22 | April 2023



Financing Green Energy Transition

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MESSAGE

From the CEO's Desk

India is now aiming towards becoming Energy Independent before completion of 100 years of our independence. The country is implementing "Mission Circular Economy". In January, 2023, the Government has announced the National Hydrogen Mission and to make India a Global Hub for Green Hydrogen Production and Export during next 25 years. We are now systematically moving towards a Clean Energy Transition. The new opportunities from Green Growth to Green Job are opening up today for our start-ups & youth.

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Our efforts to continue moving in this sector and continuing with full thrust.



SCGJ continued with its efforts to consolidate and strengthen its technical capabilities and review of qualifications and training materials. During 2022-23, 9 new qualifications have been developed and approved by NCVET relating to Solar EV Charging, Solar Cold storage, rain water harvesting, Green Hydrogen and Solar PV cell manufacturing Technician. We have already trained 1000 trainees across 4 qualifications on advanced and basic qualification for both Solar cold storage and Solar EV charging infrastructure under the UNDP project.

Skill council for Green Jobs in collaboration with International Solar Alliance delivered the series of Online Training program on various topics for ISA Member Countries. During the year, over 700 candidates has been Trained for participants from more than 30 different countries participated in this training program. The 6 training batches were conducted during 2022-23. The Training was delivered on Scaling Solar Applications for Agriculture Use (Solar PV Water Pumping Training). SCGJ has implemented 2 physical training batches on Solar Rooftop Entrepreneurship funded by Climate Policy Initiatives. In the current phase, 62 candidates have been trained and certified on "Solar Photovoltaic Entrepreneur" at Bhubaneswar, Odisha and New Delhi. SCGJ continues to promote and implement CSR projects with different organizations.

SCGJ is continuing to implement the SBI Card CSR supported project on setting up Grid tied Solar PV plants at government hospitals in Delhi. SCGJ is also providing skilling and training for maintenance of the project.

Under the World Bank supported project, SCGJ aims to identify and recommend possible innovations to strengthen the design and delivery of vocational skills in Renewable Energy (focus on solar energy), through structured research in schools for children aged 15 -18 years (Class 9-12) across Government Schools in Gujarat. This research will provide actionable recommendations on incorporating vocational skills in renewable energy which can facilitate school to-work transition.

In order to improve employability and entrepreneurship opportunities in the green energy sector. SCGJ is implementing a project supported by M/s Redington Ltd. to focus on skilling of 500 unemployed youth of Maharashtra and Karnataka. Our efforts for promotion of learning continues through the series of webinars on the occasion of "Azadi Ka Amrit Mahotsav" covering various topics in Renewable Energy, Sustainable Development, waste management, waste to fuel etc. We have completed more than 72 Webinars successfully.

I am proud to share that we have achieved a major breakthrough with the German industry and signed an MoU for collaboration of skilling, training and employment in the solar energy industry.

Dr. Praveen Saxena

Chief Executive Officer
Skill Council for Green Jobs

Strategic Alliance with German Industry

Germany needs more hands for the energy transition and want to secure the necessary massive expansion of solar energy through trained craftspeople.

Shri Arpit Sharma, COO, SCGJ signed MoU with Bundesverband Solarwirtschaft E.V., Germany (BSW Solar) during the visit of German Chancellor, Olaf Scholz in New Delhi, focusing on boosting bilateral ties in the areas of Trade & Investment, New Technologies, Clean Energy & Skill Development. SCGJ had the privilege to exchange the MoU with Bundesverband Solarwirtschaft E.V., Germany (BSW Solar) to cooperate mutually by promoting the development of Skills and Job opportunities in the field of Renewable Energy through the collaboration in each others country.



The lack of skilled workers has been identified as one of the greatest challenges for implementing Germany's ambitious targets for renewable power expansion and other energy transition-related activities. A recent report estimated the number of workers required at more than 200,000, with skilled labour needed in industries like solar power installation, heating engineering or construction. After approving a new labour strategy in October aimed at helping companies and businesses attract and retain skilled workers, the government announced in December it would amend its immigration law, hoping to fill the tens of thousands of vacant energy transition jobs. BSW plans to further expand the integration of skilled workers from abroad after the law enters into force in summer.

Green Growth

Union Budget 2023-24, Priority 05

Union Budget 2023-24 presented by Smt. Nirmala Sitharaman, Union Minister of Finance and Corporate Affairs in the Parliament on 01st Feb 2023 outlined the vision of Amrit Kaal which shall reflect an empowered and inclusive economy. Smt. Nirmala Sitharaman listed seven priorities of the Union Budget and said that they complement each other and act as the 'Saptarishi' guiding us through the Amrit Kaal. They are as follows: 1) Inclusive Development 2) Reaching the Last Mile 3) Infrastructure and Investment 4) Unleashing the Potential 5) Green Growth 6) Youth Power 7) Financial Sector.

Hon'ble Prime Minister has given a vision for LiFE or Lifestyle for Environment, to spur a movement of environmentally conscious lifestyle. India is moving forward firmly for the 'Panchamrits' and net-zero carbon emission by 2070 to usher in green industrial and economic transition.

This Budget builds on our focus on Green Growth!



Focus areas of Green Growth



GREEN GROWTH

MOVING FORWARD TO ACHIEVE THE CLIMATE GOALS

- Green Credit Programme to be launched to incentivize sustainable actions
- PM-PRANAM* to be launched to incentivize States/UTs to promote alternative fertilizers
- 500 new 'Waste to Wealth' plants to be established under GOBARdhan Scheme
- MISHTI^ to be taken up for Mangrove plantation along coastline
- Amrit Dharohar to be implemented over next 3 years for optimal usage of wetlands

*PRANAM: PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth
^ MISHTI: Mangrove Initiative for Shoreline Habitats and Tangible Incomes

@PIB_India @PIBHindi @pibindia @pibindia PIBIndia @PIB_India @PIBHindi @PIBIndia

Focussed Area	Measures Announced
Green Hydrogen Mission	National Green Hydrogen Mission, with an outlay of Rs 19,700 crore, will facilitate transition of the economy to low carbon intensity, reduce dependence on fossil fuel imports, and make the country assume technology and market leadership in this sunrise sector. Government is targeting to reach an annual production of 5 MMT by 2030.
Energy Transition	Allocated Rs 35,000 crore for priority capital investments towards energy transition and net zero objectives, and energy security by Ministry of Petroleum & Natural Gas.
Energy Storage Projects	Battery Energy Storage Systems with capacity of 4,000 MWH will be supported with Viability Gap Funding. A detailed framework for Pumped Storage Projects will be formulated.
Renewable Energy Evacuation	The Inter-state transmission system for evacuation and grid integration of 13 GW renewable energy from Ladakh will be constructed with investment of Rs 20,700 crore including central support of Rs 8,300 crore.
Green Credit Program	A Green Credit Program will be notified under the Environment (Protection) Act. This will incentivize environmentally sustainable and responsive actions by companies, individuals and local bodies, and help mobilize additional resources for such activities.

Focussed Area	Measures Announced
PM-PRANAM	PM Program for Restoration, Awareness, Nourishment and Amelioration of Mother Earth” will be launched to incentivize States and Union Territories to promote alternative fertilizers and balanced use of chemical fertilizers.
GOBARdhan scheme	500 new ‘waste to wealth’ plants under GOBARdhan (Galvanizing Organic Bio-Agro Resources Dhan) scheme will be established for promoting circular economy. These will include 200 compressed biogas (CBG) plants, including 75 plants in urban areas, and 300 community or cluster-based plants at total investment of Rs 10,000 crore. In due course, a 5% CBG mandate will be introduced for all organizations marketing natural and bio gas. For collection of bio-mass and distribution of bio-manure, appropriate fiscal support will be provided.
Bhartiya Prakritik Kheti Bio-Input Resource Centres	Over the next 3 years, 1 crore farmers will be encouraged to adopt natural farming. For this, 10,000 Bio-Input Resource Centres will be set-up, creating a national-level distributed micro-fertilizer and pesticide manufacturing network.
MISHTI	‘Mangrove Initiative for Shoreline Habitats & Tangible Incomes’, MISHTI, will be taken up for mangrove plantation along the coastline and on salt pan lands, wherever feasible, through convergence between MGNREGS, CAMPA Fund and other sources.
Amrit Dharohar	Government will promote their conservation values through Amrit Dharohar, a scheme that will be implemented over the next three years to encourage optimal use of wetlands, and enhance bio-diversity, carbon stock, eco-tourism opportunities and income generation for local communities.
Coastal Shipping	Coastal shipping will be promoted as the energy efficient and lower cost mode of transport, both for passengers and freight, through PPP mode with viability gap funding.
Vehicle Replacement	Allocated adequate funds to scrap old vehicles of the Central Government. States will also be supported in replacing old vehicles and ambulances.

Reference

https://www.indiaonline.com/article/budget-highlights/union-budget-priority-green-growth-1675245159579_1.html

Governing Council

Sixteenth Meeting

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The 16th Governing Council meeting of SCGJ was held under the chairmanship of Mr. Sameer Gupta, Chairman and Managing Director, Jakson Group and Chairman SCGJ



The Chairman mentioned that India's economy is consistently growing and with the new initiatives of the Government and the renewable energy sector is also moving at the same pace. He said we are fifth largest economy in the world and the way things are, we are set to become third largest in the next four to five years.

It is matter of privilege and honour for India to host G-20 summit and the theme again is very apt, “One Earth · One Family · One Future”. During the COVID times in particular, under the dynamic leadership of our hon`ble Prime Minister, India had the foresight to figure out opportunities within the challenges which entire world was facing. I think we have worked on strategies for creating a stronger, futuristic and a sustainable country.

Over the last few years, the Government had sharp focus on execution of the strategies which is the key to success. India continues to build a strong physical, social as well as digital infrastructure and this is one of the key focus areas of the government. The recent budget was very holistic as it hinges around inclusive growth, providing quality of life for every citizen and sustainability. It has been articulated beautifully, where seven priorities have been set up and this will position India as a very strong nation for times to come.

There is significant focus on green economy which will result in India leapfrogging its position in renewable energy sector. With added focus on transmission, storage and green hydrogen, which was very evident in the budget. We can say that government is committed to meet or exceed its renewable target of 2030. Energy transition is clearly a priority for our country, which has taken national importance for reasons of both energy security and carbon neutrality. Green hydrogen mission targets production capacity of green hydrogen to touch at least 5 MMT per annum by 2030, which will significantly facilitate transition of India into low carbon economy. Recently, 5.9 million tons of lithium deposits have been discovered in Jammu and Kashmir. It is exciting news for the renewable energy sector. This could potentially reduce our country's dependence on imports and further accelerate the shift towards clean energy. This will put India at number two position in the World for lithium reserves. This discovery will help not only India's automobile sector, but will also open up opportunities in other sectors like aerospace, defence and energy storage. It's a very positive development which will accelerate our transition towards cleaner, sustainable and self-reliant. Future green growth is the priority and clearly India is firmly moving towards net zero emission by 2070, which will assure green industrial and green economic revolution.

The initiative of creating green jobs is a crucial step forward in the country's mission to become a greener and sustainable nation. To address these challenges, contribution of Skill Council for Green Jobs needs to be immense. Without having green skills, India cannot meet the demand of green jobs. Skill Council for Green Jobs, over the last few years have taken many initiatives and will continue to do so.

Dr. Saxena CEO, SCGJ gave an over view of the activities during the year 2022-23. He mentioned that Skill Council for Green Jobs has completed 7 years of its operations. Apart from skill trainings to over 5.30 lakh candidates through its training partners, SCGJ has been focusing on the quality of training and improving training material, by taking help from its Industry partners and also from the bilateral and multilateral organizations. Upgrading knowledge and skills of its certified trainers by international experts has been a unique activity of SCGJ in past few years . It has joined hands with GIZ, UNDP, FCDO (former DFID) to strengthen its quality of training. SCGJ has expanded its outreach by participating in international activities and tenders for skilling in renewable energy sector in India.

SCGJ is now digitizing its activities. It has an online training aggregation platform so that its training partners can do market mode trainings in an online mode. SCGJ has now its own job portal. The SCGJ Job Portal is a technology initiative by Skill Council for Green Jobs to seamlessly connect employers with skilled candidates in the Green Energy Sector.

SCGJ is now working towards its inhouse ‘Green India Portal’ to maintain its all activities including training and certification apart from using Digi locker for storing data of certified candidates. Strengthening its training material and making these available in local languages is a continued effort of SCGJ. SCGJ is gradually moving towards online trainings on NSQF aligned qualifications in market mode and It is proposed to develop a virtual “ Renewable Energy academy of Experts”

Hon`ble Mr. Francesco La Camera, Director General, International Renewable Energy Agency (IRENA) and his team visited SCGJ office on 25th April, 2022 to discuss and explore future collaborations with SCGJ. SCGJ has been formally recognized as an “Awarding Body” by the National Council for Vocational Education and Training (NCVET) on 31st May, 2022. SCGJ continued its efforts in organizing the series of 75 webinars on the occasion of “Azadi Ka Amrit Mahotsav” covering various topics in Renewable Energy, Sustainable Development, waste management, waste to fuel etc. So far 64 webinars have been organized.

SCGJ participated in WorldSkills competition for Water technology and Renewable Energy trades. It got India’s first ever Gold medal at a WorldSkills Competition in the year 2019. During the year 2022, It has again secured silver medal in Water Technology in the World Skills special edition 2022 held in Germany for Water Technology and First time participated in World Skills special edition 2022 for Renewable Energy, held in Kyoto, Japan. SCGJ was invited by the World Bank to the 3rd WePOWER Conference during December 6th-8th December,2022 in Bangkok, Thailand to share the Indian experience of skilling and jobs across the Green jobs segment.

He also presented the details of the Skill Gap Studies being carried out by SCGJ in different sectors of Solid Waste Management, Landscape of Green Jobs, Biomass demand-supply value chain for Pellet production, Green house gas accounting and Plastic waste management. He also informed the GC about the annual study on jobs and skilling in domestic solar and wind energy sector undertaken by SCGJ in collaboration with NRDC and CEEW.

Dr. Saxena mentioned that SCGJ has completed 8 major CSR projects so far and is now implementing projects on implementation of solar power plants from SBI Card, The World Bank Project towards introducing Vocational Education in Renewable Energy in Schools, UNDP Project on Green Electric Vehicle Charging Infrastructure and Solar Cold Storage, Climate Policy Initiative (CPI) Funded Entrepreneurship development and CSR Project from Redington Foundation to develop the skills of youth in Optimum design of Solar PV power plants. During 2022-23, nine new qualifications have been developed and approved by NCVET relating to Solar EV Charging, Solar Cold storage, rain water harvesting, Green Hydrogen and Solar PV cell manufacturing Technician. Over 650 industry, mainly MSME were contacted and informed about the activities of SCGJ. Industries added this year to our Membership are 26 in number. SCGJ has so far signed MoUs / LoAs with 69, industry / organizations, including 11 during 2022-23, with a view to cooperate in its activities and also help in achieving placement of SCGJ certified candidates.

The GC was informed During the Year SCGJ has provided training for 11,821 candidates through its affiliated training partners and certified 10,975 candidates. In cumulative terms, SCGJ, through its training partners have trained 5.30 lakh candidates and certified 5.13 lakh candidates during last 7 years.

Dr. Saxena briefed the GC about the Short term and RPL trainings and certification conducted by SCGJ through its affiliated training partners and assessment agencies. It was informed that 283 candidates have been certified as trainers for all its sectors. SCGJ has empanelled 8 assessment agencies for carry out the future assessments and conducted Training of Assessor for 42 candidates. During the year, SCGJ has conducted assessment and certification in 8 State Missions. SCGJ has completed the RPL Trainings of more than 7634 sanitation workers supported by NSKFDC across the country. During the Year SCGJ has provided training for 11,821 candidates through its affiliated training partners and certified 10,975 candidates. In cumulative terms, SCGJ, through its training partners, have trained 5.30 lakh candidates and certified 5.13 lakh candidates during last 7 years.

Mr. Subrahmanyam Pulipaka, Chief Executive Officer, National Solar Energy Federation of India informed the members that in November, 2022 hon`ble Finance Minister launched the SCGJ and NSEFI Joint Portal which is integrated with SCGJ job portal with NSEFI Portal where women engineers, women entrepreneurs can get listed and they can get hired by the companies who want to hire women. This is an important step and it received very good traction.

Mr. Subrahmanyam further informed that Germany has identified India as one of the potential countries where they can get trained professionals to cater to their growing demand of their solar installation. We have had a meeting between SSEFI, SCGJ and German Solar Association in December. They want 27,000 trained professionals in solar by the end of 2030 from outside of Germany. They are very impressed with the curriculum and the structure of SCGJ and they would like to add a top up course of German language. We are happy to inform that this partnership of NSEFI, SCGJ and German Solar Association is moving forward. It is expected that this will be announced by the German Chancellor during the India visit proposed on 25th and 26th February, 2023. In March, there is a Berlin Energy Transition, where there may be tripartite agreement This is a huge testimony to not only India's growing cloud in energy leadership on the global scale, but also as a recognition to the work that SCCJ has done.

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Mr Sunil Jain, Partner, Essar capital was unanimously elected as co-chair of Skill Council for Green Jobs for the year 2023-2024



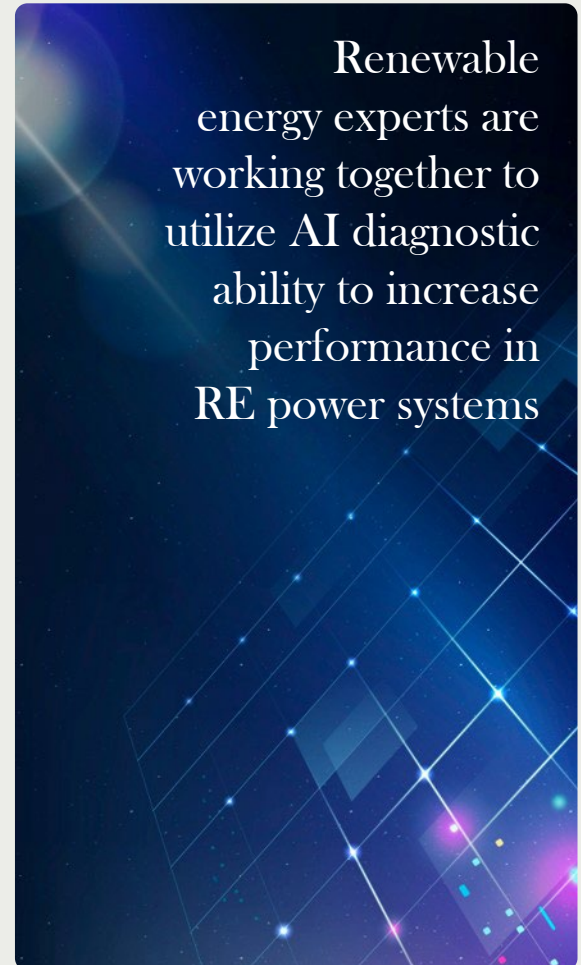
Artificial Intelligence Applications in Green Jobs

Renewable Energy

The Major focus of the Government is to install about 230 GW of solar energy capacity and 100 GW of Wind power projects by 2030 to achieve cumulative capacity of 450 GW from renewables. Today the country has an installed capacity of over 64 GW Solar projects, 42 GW wind projects, 10 GW bio energy projects and 4.5 GW small hydro projects. These sectors are expected to generate over 35 lakh new jobs by 2030. Renewable energy experts are working together to utilize artificial intelligence (AI) diagnostic ability to increase performance in RE power systems. AI and machine learning methods can also be and are widely used for optimizing operations of these projects and applications.

Among the major areas identified for AI applications are:

- Optimize operation and maintenance of photovoltaic (PV) power plants by detecting and classifying anomalies, predicting failures, and scheduling maintenance activities.
- Real-time monitoring data such as power output, temperature, and weather information for identify the common fault class patterns.
- To provide grid operators and engineers with real-time analysis and visualization capabilities of the electric power system.
- To predict the electric load one day in advance in areas that have large amounts of behind-the-meter solar, wind power project. That information guide operators to manage the electric grid more efficiently and cost-effectively.
- Forecasting framework for day-ahead net-load at substations from net-load measurements and quantify its impact on net-load patterns.
- The widespread adoption of rooftop photovoltaic systems and grid-scale solar systems requires system adoption, track it is impact, and plan new deployments.
- To map the deployment of photovoltaic (PV) systems and the distribution network across the country with high accuracy and detail.
- AI can help improve efficiency by accurately forecasting data about wind speed, height, direction, and other factors to determine the most efficient way to generate electricity from a wind turbine.
- Wind turbines are complex machines that require constant monitoring and maintenance to ensure they continue to work correctly over their lifetime. Wind turbines can use AI to identify potential problems before they happen, reducing repair costs to a minimum. By incorporating AI into this process, manufacturers can reduce costs while improving accuracy levels even further.
- Using artificial intelligence, wind turbines can control themselves and adjust based on weather patterns and temperature changes. This will allow them to produce more energy without little to no human intervention or supervision.



It is proposed to develop qualifications to take care of above aspects of utilizing AI in the green energy sector. Following qualifications are proposed to be modified to incorporate AI aspects

S.N.	Domain	Name of Qualifications	NSQF Level
1	Solar Energy	Solar PV Engineer(Option: Water Pumping System)	5
2	Solar Energy	Solar PV Business Development Executive	5
3	Solar Energy	Solar Proposal Evaluation Specialist	5
4	Solar Energy	Rooftop Solar Grid Engineer	6
5	Solar Energy	Solar PV Designer	7
6	Solar Energy	Solar PV Project Manager (E&C)	7
7	Wind Energy	CMS Engineer - Wind Power Plant	5
8	Wind Energy	Wind Resource Assessor and Site Surveyor - Wind Power Plant	5
9	Biomass Management	Manager- Waste Management (Elective: Biomass Depot/Compost Yard/Dry Waste Center)	6
10	Biomass Management	Plant Head - Operations Compressed Biogas/Waste to Energy	7
11	Biomass Management	Supervisor - Operations and Maintenance Compressed Biogas/Waste to Energy	5
12	Biomass Management	Feedstock Manager - Procurement and Composition	6

Key Activities

CSR and other Funded Projects

Entrepreneurship Program

SCGJ is now focusing on developing an Entrepreneurship program around all its major qualifications including solar energy, solar power projects, solar water pumping, waste management, Bio Energy ,Green Hydrogen etc. This activity is proposed to be enhanced during the year 2023-24 with about 10-12 Entrepreneurship development programs.

Training for ISA Member Countries

Skill council for Green Jobs in collaboration with International Solar Alliance delivered the series of Online Training program on various topics for ISA Member Countries. During the year, over 700 candidates has been Trained for participants from more than 30 different countries participated in this training program. The 6 training batches were conducted during 2022-23. The Training was delivered on Scaling Solar Applications for Agriculture Use (Solar PV Water Pumping Training).



CSR Project from SBI Card

SCGJ had received CSR Project funded by SBI Card on Design, supply, erection, and commissioning of 300 kWp Grid tied Solar PV plants at 2 government hospitals in Delhi. On successful completion of the first part of the project, SBI Cards have further sanctioned one more project of 450 kWp grid tied Solar PV plant in Civil Hospital, Gurugram (150 kWp) and Government College for Girls, Sector14 (300 kWp) in Gurugram, Haryana. These projects are now under implementation. SCGJ is also providing skilling and training for maintenance of the projects.

The World Bank Project towards introducing Vocational Education in Renewable Energy in Schools

The World Bank is currently supporting SCGJ in implementing a project which aims to identify and recommend possible innovations to strengthen the design and delivery of vocational skills in Renewable Energy (focus on solar energy), through structured research in schools for children aged 15 -18 years (Class 9-12) across Government Schools in Gujarat. This research will provide actionable recommendations on incorporating vocational skills in renewable energy which can facilitate school to-work transition.

UNDP Project on Green Electric Vehicle Charging Infrastructure and Solar Cold Storage

UNDP has awarded to Skill Council for Green Jobs a project titled 'Development of 4 nos. of qualification packs and Skilling 1000 persons on Green Electric Vehicle Charging Infrastructure and Solar Cold Storage'. As part of this project 4 qualifications on advanced and basic qualification for both Solar cold storage and Solar EV charging infrastructure have been developed by SCGJ and approved by NCVET. The project aims to train and certify 1000 trainees across 5 qualifications on PV Installer (Suryamitra), Solar cold storage and Solar based EV charging infrastructure.

Key Activities

CSR and other Funded Projects

Climate Policy Initiative (CPI) Funded Entrepreneurship Development

Climate Policy Initiative (CPI) is currently supporting SCGJ in implementing 2 physical training batches on Solar Rooftop Entrepreneurship. This is an extension of the previous phase of the project where 53 candidates were trained as Solar Rooftop Entrepreneurs. In the current phase, 62 candidates have been trained and certified on “Solar Photovoltaic Entrepreneur” at Bhubaneswar, Odisha and New Delhi. This is a mixed job role with suitable focus on entrepreneurial opportunities across rooftop, ground mounted civil & electrical functions along with solar pumping business space.



CSR Project from Redington Foundation

Redington Foundation, a trust of Redington (India) Limited to implement various CSR activities towards the betterment of the society have sanctioned a CSR project to SCGJ entitled “Develop the skills of youth in Optimum design of Solar PV power plants” to improve their employability and entrepreneurship opportunities in the green energy sector. The project is to focus on 500 unemployed youth of Maharashtra and Karnataka and trained in the higher level of qualification with final aim of getting them job in the solar domain.

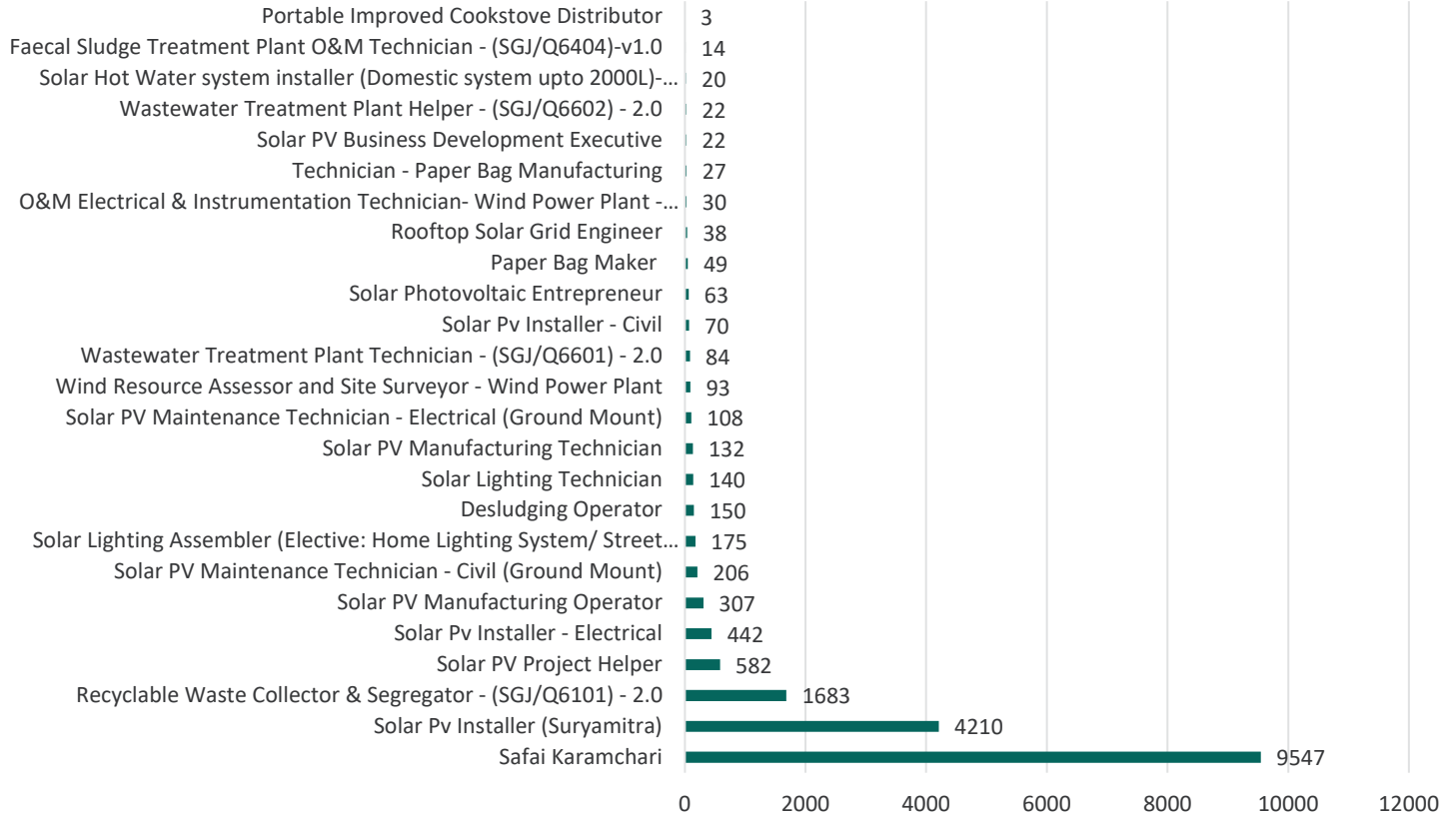
SCGJ Statistics through FY22-23

Trainings

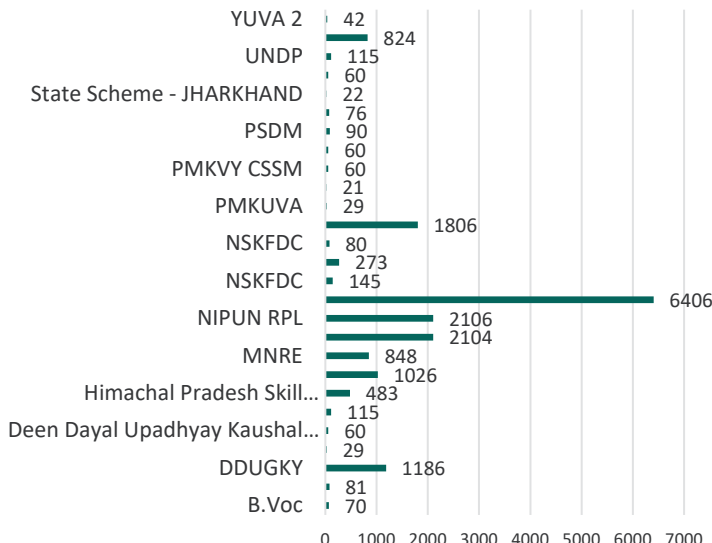
Total Training | 18217
Cumulative Training | 536397

Job Role Wise

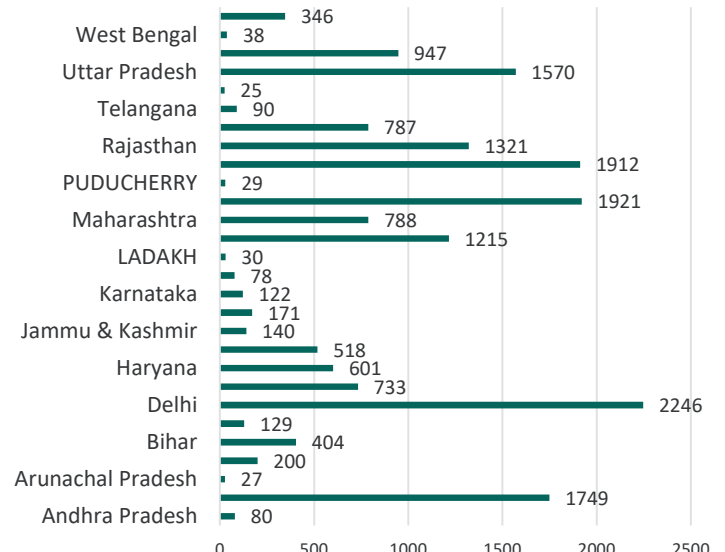
Total Trainings



Scheme Wise Trainings



State Wise



Azadi Ka Amrit Mahotsav

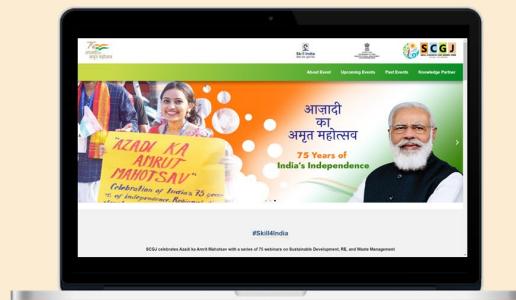
Proceedings of Webinar Series



Webinar Series Celebration

By Skill Council for Green Jobs

#Skill4NewIndia



Webinar Hosted
Every Friday

SCGJ celebrates Azadi ka Amrit Mahotsav with a series of 75 webinars on Sustainable Development, Renewable Energy and Waste Management

Visit: scgj.azadikamritmahotsav.in

We thank all our eminent speakers from India and Overseas



Celebration of 75 years of India's Independence

Government of India is commemorating 75 years of progressive India and the glorious history of its people, culture and achievements by celebrating 'Azadi Ka Amrit Mahotsav'. The 75th anniversary of India's independence is a testament to its march from a young nation to an economic superpower today. Much of this journey has been possible due to the rich heritage of skills and craftsmanship that has strengthened the country. It is indeed a step towards aligning all its efforts with the larger vision of building a New India. As a part of the 'Azadi ka Amrit Mahotsav' 2021-22, Skill Council for Green Jobs (SCGJ) is organizing a series of Webinar on Sustainable Development, Renewable Energy and Waste Management by inviting eminent and learned Speakers so as to deepen the understanding of recent developments in these sectors.

The first in the series was launched on 24th September 2021 by Mr. Sameer Gupta – Chairman (SCGJ) and Dr. Praveen Saxena – CEO (SCGJ). SCGJ is continuing to bring eminent Speakers in diverse field/sectors so to enhance knowledge and learning and bring forth various development and innovation in Renewable Energy(RE) and waste management as a part of the 'Azadi ka Amrit Mahotsav' 2021-22.

By March 2023, a total of **72 webinars have been organized** on different topics.

SCGJ is presenting the proceeding of the events in this and upcoming newsletters.



Webinar on Sustainable Supply Chain of Plastic Waste Management

Mr. Ashish Jain

Founder Director
Indian Pollution Control Association



Scan to Watch the Session on SCGJ YouTube Channel or [Click Here](#)



Speaker Profile

Mr. Ashish Jain is a Founder Director of Indian Pollution Control Association (NGO) and appointed as the expert member in various committee constituted by Central and States Govt. for improving the Solid Waste and Plastic Waste Management Rules. He has more than 20 years of professional experience in the field of Solid Waste Management, Air Pollution and Environment Education and published books, research papers and articles on these subjects. He is pioneer in conceiving and execution of EPR action plan for plastic waste management at pan India. His expertise lies in developing sustainable supply chain of waste and His professional work encompasses introduction of new technologies related to waste minimization, community engagement, promotion of recycling, and explore sustainable solutions for healthy society. He is running plastic recycling facility and encouraging youngsters to become entrepreneurs in the field of Solid Waste Management through his academic collaboration with Educational Institutes.

Webinar Summary

Plastic is a recognized enabler of modern-day economy & in recent times, due to globalization, its usage has increased several folds leading to generation of large amounts of plastic waste. A Central Pollution Control Board (CPCB) report (2019-20) puts the total annual plastic waste generation in India at a humungous 3.4 million metric tonnes per year and the management of this amount plastic waste is one of the most formidable issues of our times.

Plastic is non-biodegradable in nature and this property makes it a nuisance creating commodity which otherwise have a range of benefits to offer. Attributing to this nature of plastic, it becomes pertinent to collect the post-consumer plastic for proper disposal but there are several reasons that have resulted into the issue of plastic waste management in India. To name a few reasons, we can start with the non-segregation of waste at source, peoples' lethargic attitude towards plastic waste management, littering, in-efficient door-to-door collection system of waste, lack of awareness about recycling properties of the plastic waste commodities, lack of efficient infrastructure, high logistic cost involved in collection, storage and transportation of light weight plastic waste, high rate of contaminations on post-consumer plastic waste which again adds more cost for the recyclers. These issues are the key factors that lead to the linear economy (take-make-dispose) which means plastic waste makes it to landfills which should be the last resort in the hierarchy of waste management.

In response to these challenges, governments, organisations, corporates, housing societies and individuals are implementing measures to stop plastic waste leakages into the environment, improve recycling, and reduce the need for resource extraction. There are certain promising actions which are necessary to be undertaken to improve the current plastic waste management supply chain, which is an outcome of the aforementioned issues, and to make it more sustainable. Making this system sustainable means that any plastic waste that can be reused or recycled into something else, should be segregated out & sent to the right reprocessing facilities that can transform it into something useful.

Some of the promising approaches that can work in this direction are:

- Mass awareness on source segregation and zero littering of waste
- Implementation of a system that ensures 100 % plastic waste collection
- Capacity building of waste workers on right waste collection practices, segregation of different grade of plastic and their health & hygiene. The waste workers have very high stake in the waste management system and there is a need to enable them with the organized sectors and increase their capacities and skill for efficient plastic waste management system in any city.
- Development of dry waste collection centres or material recovery facilities at ward level, which will be equipped with hydraulic balers to reduce the logistic cost
- Supplying quality and segregated plastic waste material to the respective recycling industries
- Connecting more industries for the recycling or processing of plastic waste

Apart from abovementioned measures, it is pertinent to bring together all the stakeholders on the same page, which is, sharing the similar goals of sustainable development. Closed-loop models are crucial to the sustainable supply chain and these measures guarantees a system of waste management which is holistic, efficient, effective and most importantly, sustainable in nature.



Webinar on Potential of Hydrogen as a Clean Fuel for Transportation in Today's Perspective

Dr. Jayakrishnan Krishnanaunni

Architect, BGSW



Scan to Watch the Session on SCGJ YouTube Channel or [Click Here](#)



Speaker Profile

Dr. Jayakrishnan has over all work experience of over 12 years in the field of research and development and project management. He is currently working as an Architect with BGSW since 2018. He has experience of working with different Indian and Japanese automobile OEMs and has been part of BS6 stage emission complaint vehicle development for different OEMs. Prior to joining Bosch, he was working as a Project Scientist at IIT Delhi and has handled several research projects during his tenure. His research topic included development of low emission vehicle for transportation with focus on Hydrogen, biofuel etc. He was awarded the degree of Doctor of Philosophy (Ph.D.) for work in the field of application of hydrogen fuel for automotive application from IIT Delhi in 2018. He also holds M.Tech degree in Energy & Environment management from IIT Delhi and B.Tech in Automobile Engineering from University of Kerala. He has several publications in reputed international journals. He has presented his research in several reputed conferences and has won awards on its merit.

Webinar Summary

Combating the climate change and energy security has driven the nations across globe to aggressively pursue clean energy solutions. Hydrogen one of the most abundant element which act as an energy carrier has been considered key to achieving the above mentioned goals. The session focused on the application of hydrogen as fuel for transport sector. Different ways in which hydrogen can be used in the transportation sector such as the internal combustion route, the fuel cell routes were discussed along with overview and merits of both the technologies.

The maturity of these technologies at the current point of time were also discussed. The session also discussed how hydrogen R&D was driven by MNRE, GoI and discussed about some major hydrogen-based demonstration projects for transportation undertaken by IIT Delhi, Mahinda & Mahindra, Tata Motors, CSIR, KPIT etc. Challenges faced for the technology implementation such as cost of production of hydrogen, policy support and regulatory changes, storage, transportation and dispensing of hydrogen (infrastructure development) etc were discussed.



Webinar on Unravel the Intricacies of Agricultural Residue Bioprocessing and Bioeconomy Opportunities

Dr. Meena Krishania

Scientist C, Center and Applied Bioprocessing Center, Mohali



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Speaker Profile

Dr. Meena Krishania is currently working as Scientist C at Center and Applied Bioprocessing Center, Mohali. She obtained her Bachelor of Engineering degree in Biotechnology Engineering from Rajasthan University in 2007. She continued her education and completed her M.Tech in Chemical Engineering at MNIT, Jaipur in 2009 and PhD from the Indian Institute of Technology, Delhi in 2013. After PhD, Dr. Meena accepted an assistant professor position at the University of Amity, Haryana, where she taught Applied Chemical Engineering, Renewable Biomass and Bioenergy, Industrial Bioprocessing etc for a short duration of time (8 months). In 2014, she began working at CIAB, Mohali. Where Dr. Meena has broadened her vision and continues her work on valorization of biomass and its upscaling. She invented sustainable technologies using agricultural by-products, and lignocellulosic biomass. Her work contributes to an appreciation of industrial constraints by continuously developing technology and offering better solutions. Her field of interest is Chemical Engineering, Industrial Biotechnology, Food processing, Upscaling. Over 6 patents have been filed with Dr. Meena, and two of them are granted. She has a huge number of publications in reputable national and international journals like Food Chemistry, Bioresource Technology, Energy, Fuel, Frontier of Nutrition etc. and she wrote one book on "Second-generation biofuel from lignocellulosic biomass" and 4 Chapters. She was also awarded with Early Career Research Grant (SERB) in 2017 and Best paper award in Woman Scientist and Entrepreneur Conclave at IISF, 2018, and also represented India's Young researcher in "Bioenergy of Asia" at SEE (Sustainable Energy and Environment) Forum Japan in 2011, she was also awarded with Best project award in I2Tech Open house 2010 at IIT Delhi etc..

Webinar Summary

Globally, ~1.3 billion tons of agri-food by-products as waste are produced. The treatment and disposal of these by-products is also a problem for the food processing industry. As a result of the excessive burden on treatment facilities and waste management systems in the business, a large volume of food by-products that could have otherwise been utilized as a nutrient-rich raw material which is squandered.

Agro-industrial residues or byproducts are rich in nutrients and bioactive compounds. As these wastes contain a range of components, including proteins, minerals, and carbohydrates, they should be considered "raw material" rather than "waste" for use in other industrial operations. The presence of such nutrients in these leftovers creates excellent circumstances for the exponential growth of microorganisms.

One of the major Agri-residue is Rice straw which is widely available lignocellulosic biomass that can be used to make xylitol, a food-grade functional molecule. Because of its low glycemic index, xylitol is a natural sweetener that is low in calories and safe for diabetics. It has been shown to have prebiotic potential, as well as the ability to support intestinal health, bone metabolism, and tooth decay prevention. Through bioprocessing via fermentation processes, microbes are able to utilize waste as a source of nutrients for their growth. The bio-refinery approach helps to utilize agricultural residues in fermentation processes to produce a variety of substantial, valuable compounds. Utilizing agricultural and agro-based industry byproducts as raw materials in bioprocessing can reduce production costs and contribute to waste recycling and bio-economical sustainability.

So, utilizing food leftovers for the production of value edible products not only provides an effective approach to valorize agro-industrial wastes, but also a way to manufacture a nutritionally rich product to combat nutritional deficiencies and the emergence of diseases caused by it. Due to its plant-based origin, cost-effectiveness, and high nutritional value, this intervention has a good probability of being embraced by most marketers and consumers.



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Webinar on Addressing Equity, Sustainable Development & Climate Change through Green Energy Sources

Dr. Perminder Jit Kaur, Senior Policy Fellow, DST's Centre for Policy Research
Indian Institute of Science (IISc), Bangalore



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Speaker Profile

Dr. Perminder Jit Kaur is working as a Senior Policy Fellow Jointly at the Department of Science and Technology and Centre for Policy Research, IISc, Bangalore. As a part of her fellowship, she is working on “Study of Policy Level Interventions Required for Bioenergy and Green Hydrogen in India”. Earlier, her experience as an Assistant Professor at the University School of Chemical Technology, Guru Gobind Singh Indraprastha University, New Delhi, for three years has helped her to go deeper into policy, advocacy, and governance. She is a very dynamic and highly proficient Chemical Engineer with the “Prof. Meera Madam Best Ph.D.” award from IIT Delhi, India. She has authored one book on the Sustainable Extraction of Metals from waste streams (Wiley publisher), published nine book chapters, and twenty-six research papers in refereed journals of repute. She is passionate about decentralized solutions for multi-sectoral environmental, climate change, and development planning issues. Specialties: S&T based Policy Research, Biomass Treatment and Characterization, Bioenergy, Green Hydrogen Technologies, Sustainable Development, Circular economy.

Webinar Summary

Energy is an integral part of our daily life and is the biggest driver of economic development, a clean environment, and equitable progress of a nation. Looking at the harmful effects of expensive and non-renewability fossil fuel-based energy sources, the necessity to shift to green energy sources like solar, wind, biofuel, and hydrogen can help us achieve the UN's sustainable development goals. Various feedstocks (non-edible oil seeds, lignocellulosic materials, algae, etc.) can produce different forms of bioenergy. National Biofuel Policy 2018, amended 2022, has predicted the country's annual alcohol/ethanol production capacity as around 700 crore liters.

The policy is focused on increasing the share of ethanol and biodiesel in commercial petrol and diesel through various policy instruments like setting up second-generation biorefineries in the country. According to the Ministry of New and Renewable Energy (MNRE, 2022), India has already achieved a total bioenergy capacity of 10205.61 MW through Biomass Power and Cogeneration Sector.

The recently approved National Green Hydrogen mission is a step toward shifting to renewables through annual GH production of 5 MMT (Million Metric Tonnes), its production technology through the development of infrastructure, including setting up indigenous electrolyzers and incentives to GH producers. Niti Aayog, ISRO, and Ministries of Power, Coal, Petroleum, and Renewable energy have launched a Geospatial Energy Map of India (<https://vedas.sac.gov.in/energymap>) to facilitate investors by providing comprehensive energy-related information throughout India.

India has the vision to meet the growing population's needs sustainably, at an affordable price, improving energy security, empowering villages, and increasing its manufacturing capacity. Government agencies, research institutes, and industries are trying to address the social, technical, and political challenges associated with its large-scale application. There is potential and scope for start-ups and enterprises to collaborate with academic institutes to help them scale up lab-level technologies to contribute to national development. This will pave the way for greater energy security and clean energy availability for all sections of society.



Webinar on Synthesizing DRE Experiences for NZE Pathways

Dr. Srinivas Shroff Nagesha Rao,

Consultant, World Bank, UNDP-India & Bangkok
UNIDO, ADB, Administrative Staff College of India and UNWOMEN.



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Speaker Profile

Dr. Srinivas has PhD in Mechanical Engineering Sciences. He has been working in the development sector for the last 30 years particularly in the areas of, Climate Actions for mitigation – Energy Access, Decentralized/Renewable Energy, Energy Efficiency and Corporate Social Responsibility. Currently, he is providing consulting support to the World Bank, UNDP-India & Bangkok, UNIDO, ADB, Administrative Staff College of India and UNWOMEN.

He worked as the Chief Executive Officer of REC Foundation, CSR arm of REC Limited, Government of India. He was CEO at Clean Energy Access Network, New Delhi, a consortium of 150 manufacturers, NGOs, consulting firms promoting conducive ecosystem for Decentralised Renewable Energy Systems. He worked in the United Nations Development Programme as Programme Analyst – Energy and Climate Change. He also worked in The Energy & Resources Institute, New Delhi and Indian Institute of Science, Bangalore. He has implemented over 50 projects directly and provided oversight to over 200 projects across the country. He has published over 100 books, papers, and reports. He has patents, guided over 50 interns for their internship, Masters and PhD. He has provided over 200 plus guest lectures. He worked with over 50 innovations – products, delivery models etc. He has over a dozen recognition for his distinguished contributions. He has visited over 20 countries including for official missions.

Webinar Summary

Dr Srinivas, spoke on “Synthesizing DRE Experiences for NZE Pathways” on 20 January 2023, 62nd talk of Azadi Ki Amrit Mahotsav Webinar series conducted by the Skill Council for Green Jobs.

Net Zero Emission is described as eliminating anthropogenic Carbon Dioxide Emissions over a specified period. To achieve NZE world needs to enhance use of renewable energy share from 25% in 2018 to 90% in 2050 as per International Renewable Energy Agency estimates. DRE can be defined as any system that uses renewable energy to generate, store (in some cases), and distribute energy in a localized way. It includes off-grid solar system (pico-solar and solar home systems [SHS]), mini and micro-grids powered by solar, biomass, hydro or a combination of these sources, improved biomass cookstoves, biogas and solar cookers, and productive applications.

There has been phenomenal growth of Global Net renewable capacity additions, which has touched 295 GW in 2021. This includes significant contributions of distributed PV, and others which can be categorized as DRE. India has made significant progress with Renewables and stands among world leaders. One of the conservative estimates made by Clean Energy Access Network in 2018, indicated over 100 Billion USD of investments in DRE in India. He said the number of products which were only a handful 2 decades ago now have increased to over 400 in market today.

DRE for mini-grids: India has made significant achievements in reaching out to every household with electricity access, mostly through conventional grid as part of flagship programme called Soubhagya – connecting every household with electricity. To complement grid power, about 10,000 mini grids cumulating to 500 MW provide energy access to 900,000 households in difficult to access areas. However, every individual house/ institutional premises, government infrastructure of Anganawadi, schools, Health Centres, has the potential to be DRE powerhouse to generate electricity and heating applications through renewable sources of energy. Micro Solar Pumps can replace conventional pumps to pump up water from sump to overhead tanks in India’s 300 million houses.

DRE in heating: Heating is a major shareholder in energy pie to the extent of about 50% of total primary energy in India. Though some efforts have been made to promote solar water heaters, biogas, etc. it needs lot more attention. What has been achieved till now is only a fraction of the huge potential that exists for DRE to meet low/ medium/ temperature applications for industrial process heat, domestic cooking through solar and improved biomass stove/furnace, generating potable water through Solar Distillation units, briquettes from agriculture residues to fuel industrial furnaces, boilers, etc.

DRE in agriculture value chain: Over 100 million (1/3rd to ½) Indian families depend on agriculture. DRE solutions have potential to be mainstreamed throughout the agriculture value chain. Over 30 million electrical/ diesel pump sets can potentially be replaced with solar/RE based pumping systems and introduce agri-voltaics for efficient use of these installations. Solar/biomass Cold Storages have the potential to be installed in almost every village (over 600,000 villages in India) to benefit group of farmers. This can reduce loss in agriculture produce and farmers can negotiate for better price for their produce. Solar driers can process agriculture produce to value to the produce and earn higher incomes. Solar passive canopy pushcart can help reduce the heat ingress into the cart thereby keep the produce inside cart fresh. This can reduce last mile losses benefitting poor vendors. Solar micro pumps can be helpful interventions to irrigate backyard gardens, fragmented lands.

DRE in Sericulture: India is second in the world in producing silk. India produces about thirty-five thousand tons of silk annually. Nearly 300,000 Rearing houses require heating/ cooling solutions to provide required temperature & humidity conditions to rear silkworms to produce cocoons. 61,000 cocoon processing units that convert cocoons to silk yarn. They burn about 225,000 tonnes of biomass fuel annually. Over 2000 silk dyeing units bleach/dye the silk yarn require fuel in the form of biomass, diesel, furnace oil additionally. DRE solutions have been demonstrated and hold enormous potential for scale up in Sericulture value chain.

Funds can be mobilized from different sources based on the stage of maturity of the DRE products, market and financial feasibility. Domestic grants can be mobilized for making frugal innovation, international/ climate finances can be leveraged to pilot test them, and demonstrate at scale and then mobilize subsidies, loans and equity for large scale implementation and mainstreaming.

Government of India has initiated many actions that provide good start for ecosystem to promote RE solutions which can be widened and deepened to include DRE solutions. Some such ecosystems are, Panchamrits - Prime Ministers call for Climate Actions as presented at COP26, Updated Nationally Determined Contribution which includes 500 GW non-fossil fuel based energy installations. Including RE heating solutions can accelerate achieving this target expeditiously and at a lower cost. GOI has passed a bill on Net Zero Emission Commission with mandatory annual reporting to Parliament and NZE councils at state/ district level as implementation tools in December 2022.

DRE solutions provide enormous Green Jobs opportunities. Agencies like Skill Council for Green Jobs may identify many vocations, develop qualification packs, skill people and facilitate employment/ enterprises. For example, just converting a poll guarantee of 200 units of power per year costing Rs 9000 Cr annually to Government of Karnataka as proposed by a party, can be converted to DRE mission. Installing a 1.5 kW Solar Panel can provide required electricity for 25 to 30 years with payback on investments in less than 8 years and the initiative can provide over 30,000 jobs.

In nutshell DRE is a win win at different levels. At household level, DRE can provide 100% fossil fuel free energy through Solar PV roof, biogas/ solar induction stove/ improved cookstove, Solar Water Heater, Micro Solar pump to nearly 300 million households. In Agriculture sector, potential exists to replace 30 million diesel/electric irrigation pumpsets, introduce solar cold storages, solar driers, etc. Over 600,000 villages have potential to become NZE villages by introducing solar streetlights, solar pumps, mini-grids and other RE based systems. 60 million enterprises have potential to harness DRE solutions in the form of solar PV, Solar Heating for low/ medium/ high temperature applications, and other RE solutions. India has over 800,000 Self Help Groups who can be effective implementation/ marketing vehicle for implementing DRE solutions.



Webinar on Can Solar PV technology replicate the feat of mobile telephony today?

Dr. Suneel Deambi

Expert (Solar PV) and Technical Writer-Editor



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Speaker Profile

Dr. Suneel Deambi worked for his Ph.D. program on Gallium Arsenide solar cells under a DAE sponsored project. He has previously served in several prestigious organizations like NPL, TERI, DSIR, GSI, IIT Delhi & IGNOU. Dr. Suneel has been actively working on the diverse aspects of Solar PV since 1990 till date. He is a prolific writer on S&T issues and has many popular publications to his credit in the leading newspapers and magazines etc. He has also authored five books on Solar PV technology & its applications besides a recent title on, "My days in Kashmir." Dr. Suneel has provided project consultancy services in the twin domains of Solar PV and content development (Energy) to a large number of national and international organizations thus far.

Webinar Summary

Dr. Deambi has been working on the practical aspects of Solar PV since 1990. He began the presentation by highlighting a lesser known role, i.e., space application of solar cells and thereby its modern day benefits for humankind. Following which, a comparison of sorts was laid out between the highly penetrative mobile telephony and potential outreach of solar technology from several key considerations. It was for this reason that residential use of solar was accorded precedence over its well-recognized roles in the diverse sectors of our energy economy like commercial, industrial and institutional. Further, 3-tier case specifics of expected solar utilization i.e., in a) group housing societies, b) large plotted houses and c) small housing clusters were analyzed from selective few key considerations.

The presentation also touched upon a subdued application role of solar PV technology more so based on its capability to meet the power requirements in the mW to MW capacity range. This implied looking at the huge dry cell market volume which could well be substituted/replaced by the exceptionally low power solar cells. Finally, a deeply optimistic scenario was unfolded in terms of the successful implementation of a mega solar rooftop system outreach for the mid category houses or a housing mix as such in Gujarat. The presentation concluded by wishing for a day when solar panels could dot every house or every second house much like what the earlier era of TV antennas and lately the dish antennas displayed for everyone. However, to achieve such a far reaching objective, it becomes an absolute necessity to devise an amalgamated approach of solar system delivery including its financing arrangement too.



Webinar on Skilling in Organic Waste Management

Dr. Supreet Kaur

Technical expert, Management of Organic Waste in India (MOWI), GIZ



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Speaker Profile

Dr. Supreet Kaur is working as a Technical expert, Management of Organic Waste in India (MOWI), GIZ. She holds a Doctorate in Philosophy (PhD) from the Indian Institute of Technology Delhi. She has completed her Masters of Technology (M.Tech.) in Biotechnology from Anna University, Chennai. Prior to joining GIZ, she has worked with the Delhi Government and BIRAC. As a Technical expert with GIZ, India, she is responsible for supporting the partner cities/states for sustainable organic waste management under the aegis of the Ministry of Housing and Urban Affairs (MoHUA) and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), under the leadership of the project head for MOWI and along with other team members.

Webinar Summary

The insufficient waste management directs towards a “degradation of the environment and the quality of life”, as per Municipal Solid Waste Management Manual, 2016 published by Ministry of Housing and Urban Affairs (MoHUA). The solid waste generated in India is more than 55 million tonnes per year, out of which 98.5% gets collected. On the contrary, approximately 37% of the collected waste is treated while rest reaches the landfills or is disposed of. In the coming decades, the volume of waste generation is expected to be around 165 million tonnes/year by 2031 and 436 million tonnes/year by 2050 (Report of the Task Force on Waste to Energy, Vol. I, Planning Commission, 2014). Thus, foreseeing an environmental hazard. The matter of organic waste management is a growing concern for most of the countries. Solid Waste Management Rules 2016 have been notified by the Ministry of Environment, Forest and Climate Change (MoEFCC). Municipal Corporations along with the Urban Development Departments of the states have taken numerous initiatives including IEC activities to create a sense of awareness among the local citizens as well. The Government of India’s ‘Swachh Sarvekshan’ for the ranking of cities based on various factors and parameters, though has improved the condition of organic waste management in many cities, yet several others still struggle to improve their management of organic waste. Given below are few techniques of Organic Waste Treatment.

Importance of skilling

According to Human Development Report, 2020 of UNDP, India has only 21.2 percent labour is skilled. Waste Management is an emerging sector in India, thus the skilled workforce in this sector can be wider. Management of organic waste is a tedious job as unlike inorganic or dry waste, the organic waste is heavy and attracts mosquitoes and pathogens. If not managed properly organic waste poses a serious health hazard. Training of the workforce in organic waste management is required as the most common methods of organic waste management requires skills.

Many Initiatives can be taken to improve skilling in waste management sector like: Setting up trainers and assessors academies with self-sustainable model in this sector, 50+ academies may be set up in key municipalities, Developing a framework for improving quality and market relevance of skill development training programs, Developing a robust mechanism for delivering quality skill development training, Enhancing the participation of marginalized communities including women under the program, Educating citizens and offering incentives to motivate them to utilize greener practices to mitigate climate change.



Webinar on Carbon Sinks Method & Type: Pathway to achieving net zero to achieving Net Zero Emission

Dr. Vivek Kumar Singh, Research scientist
Center for Study of Science, Technology and Policy, India



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Speaker Profile

Dr. Vivek Kumar Singh is currently a Research scientist at Center for Study of Science, Technology and Policy, India. He has earned a Doctoral degree (with Distinction) in Sustainable Energy Systems at the University of Coimbra in the framework of MIT-Portugal program (The Massachusetts Institute of Technology, USA and Portugal). His Master in technology is in Energy & Environmental Engineering from VIT University, Vellore Tamil Nadu. Prior to joining CSTEP, He worked as a Post-Doctoral researcher with The Institute for Systems Engineering and Computers in Coimbra (INESC Coimbra). He has 15 years of experience in industry, academia and research in Asia & Europe. He has also worked with The Energy and Resources Institute (TERI), and United Nations Development Program (UNDP) New Delhi. Dr. Singh's is part of the Sustainable Alternative Futures for India (SAFARI) team. His work involves the natural and artificial carbon sinks for net-zero emissions modelling and analysis of energy demand in industrial cooling under the ICAP project.

Webinar Summary

The fight against climate change is gaining momentum and governments around the world are looking to restart with 'green reforms' from upcoming the climate crisis. To achieve the climate targets set out in the Paris Agreement, the world needs to move towards 'net zero' carbon emissions by 2050. Carbon sinks as any process, activity or mechanism, which remove a greenhouse gas the atmosphere. Under the Paris Agreement 2015, India has forestry National determined contributions (NDC) which is 33 to 35 percent below its GDP emissions intensity by 2030 relative to 2005 levels. The creation of an additional carbon sink of 2.5 to 3 billion tonnes of CO₂e through the addition of forests and tree cover.

Consistent with the updated NDC, India has now committed to reducing its GDP intensity by 45% by 2030 from 2005 levels. There are various Natural and Artificial Carbon Sinks (NACS) technology exiting with science community as: Natural carbon sinks (NCS), Forests, Farms, Deep Ocean, Bioenergy with Carbon Capture and Storage (BECCS) another Artificial (man-made) carbon sinks (ACS) - Underground geological sinks - carbon capture and storage (CCS), landfills, Direct air capture (carbon dioxide removal), carbon mineralization (solid material rock formation, artificial plastic), carbon capture and utilization (CCU). NACS technology are tools for reducing emissions and needed to combat climate change. While natural carbon sinks technology is fit for the long-term vision, artificial carbon sinks technology is essential on the way to reach massive reduction in CO₂ emissions as soon as possible. Carbon sinks across the pledging carbon neutrality countries to triumph the mitigate emissions has multiple challenges as lack of Insufficient data and evidence for human civilization and development growth trajectories, rapid transition of urbanization, limited capacity of finance to support new as well retrofitting climate action plans, real time climate technology for energy intensive or non-energy intensive (climate action independently), urban development schemes and lack of climate-friendly policy.



Webinar on Financial Management for Micro, Small and Medium Entrepreneurs

Mr. Rakesh Bhan, AGM and Technical Officer (Retd.)
State Bank of India (SBI)



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Speaker Profile

Mr. Rakesh Bhan holds M.Sc. (Physics) & MBA degrees with more than 30 years of banking sector experience. He earlier served with distinction in the State Bank of India (SBI) as a AGM and Technical Officer within its Chandigarh based consultancy cell. During which, he conducted a vast number of Techno-economic viability (TEV) studies for the small, medium and large enterprises. The larger outcome of which was aimed at giving competent consultancy to the bank's operational wing towards a suitable decision-making mechanism. Mr. Bhan has been quite forthcoming on the capacity building front vis-à-vis organisation of numerous programmes on industrial management and entrepreneurship development. The immediate beneficiaries of which are field offices of the bank as also the university students and importantly, the existing MSME entrepreneurs. In turn, he has also actively participated in a large number of skill development programmes organised by the Staff colleges of SBI.

Mr. Bhan is also well familiar with the issues and prospects of a diverse range of industries related to drugs, plastic, leather and food processing more so Solar photovoltaics (PV). It was this crystal-clear understanding which stimulated him to install a net-metered 8 KWp Solar rooftop system at his residence. He is currently engaged as an independent management and financial consultant especially for the critical MSME sector of our country.

Webinar Summary

MSME's form the backbone of Indian economy with a very significant share in Gross Domestic Product (GDP) together with exports from the country. Finance is said to be life blood of any business organisation whether Micro, Small or Medium enterprise. As such, proper Financial Management signifies the wellness of running of a business enterprise and thereby the Financial Statements serve as basic information documents of a business unit whether Micro, small or medium enterprise. In turn, these are termed as Trading or Manufacturing Account, Profit & Loss Account and Balance Sheet. These statements clearly demonstrate the financial performance during any period besides presenting the financial position i.e what an enterprise owes and owns as on any particular date mostly end of the financial year.

Importantly enough, Financial analysis being used as a tool to analyze the business comprises of Ratio Analysis, Break even Point analysis and cash flow analysis too. Such tools of assessment of financial viability of an enterprise are both from Non discounting and discounting criteria. Amongst the Non discounting Criteria, Break even point analysis, Assessment of Debt Service Coverage Ratio (DSCR) and Payback period are the major tools for assessment of financial viability of an enterprise. In case of assessment of viability on a discounting criteria, Net present value (NPV), Internal Rate of Return (IRR) and discounted payback period are counted amongst the major tools. Project funding availability from Bank's perspective is analysed through Gross and Net Debt Service Coverage Ratio. From banker's point of view, DSCR is mainly analysed to show the ability of a business unit to repay the debt obligation of the unit to the Bank.



Webinar on Introduction to Various Energy Storage System: Parameters, Role, and Applications

Mr. Japen Gor Certified Master Trainer
GORenewable Technology



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Speaker Profile

Mr. Japen Gor – Certified Master Trainer & Course Designer, Solar Energy Consultant, Proprietor-GORenewable Technology, Third Party Inspector & Researcher. Mr. Gor is Proprietor at GORenewable Technology, working on project proposals, technical & financial feasibilities, designing, installation and operation & maintenance of solar PV rooftop systems and MW (utility) scale solar power plants. He possesses strong knowledge of Sketchup & PVsyst Software(s). He is a consultant and Third-Party Inspector for solar PV power plants for more than 9 years. He is certified Master Trainer in solar energy technologies and has trained more than 5000 participants in solar energy technologies. He has carried out various corporate trainings, has addressed national level government and non-government seminars as a principal trainer.

Mr. Gor holds Postgraduate Degree in Environmental and Energy Engineering from The University of Sheffield (UK). During his academic tenure at UK he had worked on various research projects such as Solar Thermal Heating/Cooling Mechanisms, Solar-Wind Hybrid Systems and more. He holds certificate in 'wind energy' from technical university of Denmark (DTU). He has published various research papers in reputed international journals. He is editorial board member of 'international journal for innovative research in science & technology (IJIRST)' journal.

Webinar Summary

In the days of energy crises and major environmental damages, Renewable Energy Sources have been the saviour of the day. However as many RE sources are not consistently available, there have been certain distrusts on them. In such scenarios, Energy Storage System (ESS) work as the link and that can be relied upon for the uninterrupted supply of energy especially Electricity. Electricity Storage Systems can be classified into 4 major categories.

- (1) Low Power Application
- (2) Medium Power Application
- (3) Network Connection Application
- (4) Power Quality Control Applications.

These Electricity Storage Systems are Thermal, Mechanical, Electro-Chemical, Chemical or Electrical in nature. Based on the duration of the requirement (interjection of the system) and amount of backup power, the type of EES can be selected. Nevertheless, the cost of the ESS plays a major role in the selection. In many cases rather than choosing a single ES System, a combination of two or more systems are preferred due to the possibility of reliable supply and cost effectiveness.

Batteries, Electrochemical (Super/Ultra) Capacitors and Pumped Hydroelectric storage systems are among the prevalent choices. Flywheels, Superconducting Magnetic Energy Storage (SMES) and Compressed Air Energy Storage (CAES) are promising technologies which can change the way Energy Sector works since centuries.

Energy Density, Power Density, Cycle Efficiency, Self-Discharge Rate, Life Cycles, Capacity are key parameters while deciding the precise ES System. It would not be a surprise if we see Solar or Wind Power Plants accompanied by appropriate ESS in the very near future.



Webinar on Waste Management: Importance of Awareness and its effects

Mr. Kuldeep Choudhary, Programme Officer
Centre for Science and Environment (CSE)



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Speaker Profile

Mr. Kuldeep Choudhary is a programme officer in Centre for Science and Environment (CSE) and posted in Agra to support Agra Municipal Corporation (AMC) to enhance solid waste management services with focus on Petha and Leather waste management. Previously he was a Project Consultant at The Energy and Resources Institute (TERI). Having around 07 years of experience in civil engineering field, he is an expert in solid waste management domain with around 4 year of experience in SWM field.

Being an environmental enthusiast by choice and civil engineer by qualification, his vision to serve the mother earth and achieve sustainable development across waste management domain, drives his passion. Till date he has published 02 research papers as a co-author in International journals, 03 report in national journals and 02 article in newspapers as a co-author and given various lecture as a faculty of waste management.

Webinar Summary

Due to Rapid urbanization, population growth, improving economic standards, India generates around 54.38 million metric tonne (as per SBM urban portal) of Municipal Solid waste (MSW) every year, and management of this MSW in developing country like India is major challenge to solve these over growing problems, from waste generation to waste segregation (which is the heart of Solid waste management), waste transportation to processing and treatment to resource recovery and disposal of remaining, every stakeholder involved in each step needs to be aware about their roles and responsibility these maybe us (Citizens), service providers (Private or Government entity); waste collector (formal or informal), waste supervisor, waste transporter, operator of processing/ treatment facilities or staff working on scientific disposal of Solid waste. Waste generation and characteristics may varies with respect to the source of waste (Households (income levels), commercials establishments, Institutions etc.), seasonal variation, and why I said Source segregation is the heart of SWM is because it affects all the other functions of management of solid waste. Municipal solid waste needs to segregate into four categories as described below as per SBM toolkit for Swachh Survekshan 2023, which are: Organic waste, Inorganic waste, Sanitary waste and Domestic Hazardous waste. There are many innovative technologies/methods which can help reduce/treat municipal solid waste at source. IEC awareness is the key component for achieving results for source segregation and home-composting.

Promotion of 3R's in Solid waste management domain is very necessary

1. Reduce: means to cut back on the amount of trash we generate
2. Reuse: means to find new ways to use things that otherwise would have been thrown out
3. Recycle: means to turn something old and useless into something new and useful

There is need to under Positive impacts of awareness in Solid waste management

- Reduction of Greenhouse gases Emissions from waste sector
- Cleaner and better environment; improved quality of air, water, land, roads, water bodies



Webinar on A Circular Economy and Integrated Waste Management

Mr. Prabhjot Sodhi, Sr Program Director (Circular Economy) and Director MRAI Centre for Environment Education (CEE)



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Speaker Profile

Mr. Prabhjot Sodhi is working as Sr Program Director Circular Economy at Centre for Environment Education. Previously Head UNDP Circular Economy – (2016-May2021) working experience with multiple donors in the space of Circular Economy (plastics) – Coca Cola, Hindustan Unilever Limited, HDFC Bank, Nyara Energy and Coca Cola Foundation. Working hands last 12 years in implementation in Circular Economy (CE) - sector strategies, systems thinking, materials flow, recovery centre, competence development programs, business models, informal sector, including safaii sathis (waste pickers), address the EPR domain, partnership across Governments, including ULBs, Civil Society, Recyclers in the domain of waste value chain. Country Program Manager for the Global Environment Facility (GEF) UNDP Small Grants Programme (SGP) for 14 years. Published works in International and National journals. Mr. Sodhi has a diversified experience in leading and implementing projects in a wide range of areas – plastic waste management to climate change, natural resources, land development to livelihoods of poor, and marginalized in the tribal, rural, and urban spaces for the last 40 years.

Webinar Summary

The circular economy foresees a more sustainable and collaborative understanding with a new market that is “closing the loop.” In addition, while countries make worthwhile contributions to reducing carbon emissions against the climate crisis, they can also decrease their dependence on imported resources and create economic growth with new employment sites. To achieve this, the governments and the private sector should start the transition process hand in hand with sustainable business and governance models.

This phrase, which we hear everywhere, is an integral part of the action plans of governments, non-governmental organizations, and international institutions. We can roughly call the circular economy a strategy developed against the problematic linear economy model. Unlike the linear take-make-dispose economy, the circular economy is a model that prioritizes respect for the planet by trying to avoid waste. It focuses on optimal use of raw materials and resources by yielding the highest economic value. The following principles form the basis:

- Eradicate waste and pollution
- Regenerate nature
- Circulate products and materials

With growing urbanization, India's urban population is expected to grow from nearly 38 crores to 60 crores in 2030. Higher incomes and consumption due to increased urbanization will lead to three times the current waste generation from 62 million tonnes to 165 million tonnes by 2030. High consumption of plastic due to its durability, low cost, flexibility, moisture resistance, superior insulation, low maintenance etc. combined with its resistance to decomposition is causing severe environmental pollution and health problems.

India generates plastic wastes of 3.46 million tonnes per annum (TPA) Even though approximately 1.58 million TPA of the plastic waste was recycled and 0.16 million TPA was co-processed in cement kilns, waste to energy, plastics to oil; it still leaves 1.72 million tonnes per annum of plastic waste unattended. This waste can be gainfully utilized through various initiatives prevalent in the country and the world – using a 7R Circularity principles reduce, reuse, recover, refurbish, repair, redesign and recycle.

Many Circular Economy strategies introduced by Government of India across various sectors e.g., recent EPR guidelines in Plastics, Tyres, Electronics, Batteries waste, and scrapping vehicles policies are being instrumental and will give a fillip for gainful development of materials resources reuse and recycling ecosystem. In a significant first, the plastics EPR guidelines allow for sale and purchase of surplus extended producer responsibility certificates, thus setting up a market mechanism for plastic waste management.

The presentation talks that waste in most towns is disposed of indiscriminately at dump yards, in an unhygienic manner by the authorities leading to problems of health and environmental degradation. Scenarios in the last three years changing and cities and town ULBs setting up Decentralised Material Recovery Facilities on population basis; one after every 40,000 HHs (250,000 population), including waste collection from markets and the concerned institutions. This will endorse the idea of segregation, collection and recovery at doorstep.

Focus is now coming to check the dumpsites; which lack systems for leachate, landfill gas collection and institute digital and manual monitoring. This will help and result checks in the ground and water contamination from runoff and lack of covering, public health problems due to mosquitoes and scavenging animals, children of the waste pickers benefitting in this bargain. The presentation shared a live example model approach as defined below.

The project is setting SWACHH CENTRES, to promote an Integrated, Interdisciplinary, Multifaceted, Dry Waste & Plastic Materials Recovery and Recycling Centres as SWACHH CENTRES which will collect all types of plastics and dry waste from different sources (residential, commercial, institutional, municipal services) to maximize the collection, give more balanced returns to the informal sector, have better material flow efficiency and partnering Municipal Corporations/Councils and Municipalities (ensuring the cities to be clean).



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& ENTREPRENEURSHIP

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Webinar on Environment Friendly Building for Sustainable Development

Mr. Pravin Kumar Jha
General Manager, Associate with Anantraj Limited, New Delhi



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Speaker Profile

Mr Pravin Kumar Jha – General Manager, Associate with Anantraj Limited, New Delhi. He has completed his Graduation degree in B.E. Civil from Amravati University. He has a experience in Sustainable project planning, management, training, technical audit, tendering, maintenances for sustainable environment friendly infrastructures, soil conservation as consultant Civil Engineer. His Key Skill is Civil Engineering. Mr Pravin Kr Jha has 28 years of experience in this field and worked with Architect firm, Environmental Institute, Construction Industry, Real estate, infrastructure etc.

Webinar Summary

Environment friendly building - Built a building, which efficiently integrates various forms of clean and Renewable energy technologies.

Concept adoption for construction of sustainable:

- a) New building over barren land with green building code from planning stage.
- b) Up gradation of existing conventional building by adoption of various forms of clean and renewable energy technologies as per feasibility report.

Technology and innovative design: Some of the technologies and design features would be incorporated in the buildings are elaborated below:

- a) **INSULATION, SHADING AND REFLECTION:** Extended polystyrene slabs , commonly known as thermo Cole, integrated in the walls and vermiculite insulation and china mosaic white finish in the terraces would be used as insulation materials resulting in reduction of space conditioning loads by 10% -15%.
- b) **SPACE CONDITIONING**
 - Earth air tunnel: The phenomenon that uniform temperature prevails below ground at a depth of 4m, has been used to keep living rooms cool during summer and warm in winters by bringing air from this depth through a tunnel 4m below. This innovative technology replaces a conventional air-conditioning system.
 - Ammonia absorption system: The air-conditioning of other common facilities would be achieved by using gas-fired ammonia absorption chillers. These consume 75% less energy than a conventional system, besides being clean and eco-friendly.
 - Solar water heating: Solar energy has been tapped for meeting hot water requirement by replacing conventional electrical geysers.
- c) **ROOT ZONE SYSTEM:** Recycling is essential for sustainability. This has been achieved by recycling the waste water generated in the complex by using an innovative root zone system which comprises a reed bed with plants called phragmites, which are capable of fixing all kinds of inorganic wastes including heavy metals.
- d) **ORIENTATION:** The building would be oriented to have minimal exposure on east and west. Large area on the south face would be provided with glazing for direct solar heat gain in winter. Shadow angle, sun shades and curtain use have been carefully design to prevent overheating during summer.
- e) **DAY LIGHT INTEGRATION:** Glare free day light would be provided in rooms of building through the use of skylights in the building. The skylights would be fitted with remote controlled highly reflective motorised shutters which can be opened or closed as required. Day linked seasons switch off lights automatically when the room is adequately lit by natural lighting.
- f) **LANDSCAPING:** Thoughtful landscaping includes wind management so that wind directions could be favourably altered, and the trees provide shelter from the dust laden wind from the south direction, use of deciduous trees that provide the required seasonal shading or solar exposure.
- g) **ENERGY EFFICIENT DEVICES:** LED lighting devices integrated with daylight would be used for reducing the power consumption.
- h) **BUILDING MANAGEMENT SYSTEM:** This is a sensor based monitoring and decision-making system which helps in coordinating and managing the load so as to effect energy savings on a continuous basis.
- i) **PV-GRID HYBRID POWER:** The building would be powered by photovoltaic-Grid hybrid system.



Webinar on Getting to Net Zero Carbon Emission

Mr. Yi Hang Yu

Manager, Intertek Assures, Hong Kong



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Speaker Profile

Mr. YI-HANG YU is completed B.Sc. (Hons) in Geography and Resource Management from Chinese University of Hong Kong and M.Sc. in Environmental Science and Law (2011) University of Sydney. Mr. Yi-Hang has 9 years of environmental consulting experience. He is a Certified Carbon Auditor and carbon management specialist with a wealth of experience serving the private and public sectors and has a proven track record of directing carbon audits for over 100 facilities in Hong Kong. He is knowledgeable in emerging low-carbon solutions and innovative carbon management trends, having spearheaded research in carbon trading and internal carbon pricing in Hong Kong. Mr. Yi-Hang has also delivered various energy policy studies, corporate sustainability initiative, due diligence assessments, government programmes, and air quality assessments for EIAs. Yi-Hang is the co-author of a book and several journals on sustainable development and carbon sequestration.

Webinar Summary

Getting to 'net zero' is no small feat for any company. It requires a systemic Greenhouse Gas (GHG) strategy that can lead you to your 'net zero' goal. This starts with a solid foundation, which is about knowing your GHG emissions, and not just GHG emissions coming from your own company, but also from your upstream suppliers and from your products, i.e. your value chain (Scope 3) emissions. 'Net zero' requires companies to reduce all Scope 1, 2 and 3 emissions to zero or near-zero following science-based pathways by 2050, as well as 'neutralizing' any residual emissions after reduction actions are implemented by your company.

Knowing your Scope 3 emissions encourages collective and collaborative efforts to reaching 'net zero', by involving all parties involved in your value chain to decarbonize. This will also help companies find new business development opportunities that are conducive to a 'net zero' future. Intertek emphasizes the need to start now in accounting Scope 3 emissions because it is more complicated than Scope 1 and 2 calculations, resulting from the various technicalities of different Scope 3 categories, to ensuring good quality primary data from your suppliers.

Therefore, we suggest doing a Scope 3 materiality assessment, which will help you identify potentially material emission sources and plan ahead in supplier engagements, data collection and data quality management. Overall, the road to 'net zero' starts with transparency and accountability along the value chain.



Webinar on Development of Geothermal Energy Resources of India

Dr. Ahsan Absar

Geothermal Consultant, ONGC Energy Center, Lakshmi Nagar, Delhi



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Speaker Profile

Dr. Ahsan Absar is currently an ONGC Consultant involved in the installation of the First Geothermal Power Plant in India at Puga in Leh District, Ladakh India. He has been associated with geothermal exploration programmes in India and abroad since 1976. He completed his Ph.D. from University of Auckland, New Zealand as a Commonwealth Scholar in 1988. He has worked with Geological Survey of India (GSI), Bhilwara Energy Ltd and Thermax. He has been a member of various Government of India committees and delegations. He is a certified Expert in Geothermal Reservoir Modelling. He is also the recipient of the National Mineral Award – 2004 for his conceptual work on numerous geothermal fields of Himalayan region in Jammu and Kashmir, Himachal Pradesh, Uttaranchal and Haryana. He has about 100 publications in national/international journals, seminars, and conferences.

Webinar Summary

Honourable Prime Minister Narendra Modi, as mentioned by him at Leh on 13th August 2014, has a vision of a carbon neutral Ladakh. Geothermal resources of Ladakh are particularly significant from this point of view. Abrogation of Article 370 has acted as a booster for taking up the development of geothermal resources of Ladakh UT. Geothermal energy is the natural heat stored within the earth. It may have originated because of the interaction of various subsurface processes. It may be economically harnessed if the thermal gradient is anomalously higher than the normal gradient of 30 OC/km. Technologies are being developed now to harness energy in regions of moderate thermal gradient (40 to 50 OC/km) through Engineered Geothermal Systems (EGS). About 350 hot spring localities have been identified in India which are clustered in 8 Geothermal Provinces, the most prominent and promising of these being the NW Himalayan Geothermal Province, which alone hosts more than 150 geothermal areas. The potential of Indian geothermal resources has been estimated at about 10,000 MW. Most promising resources occurring in Ladakh UT, Himachal Pradesh and Uttarakhand, confined to NW Himalaya, may have a cumulative power generation potential of about 200 MW and the bulk of it may be available in Ladakh. Geothermal exploration in India started in India in 1973 with focus on Puga and Chhumathang geothermal areas of Ladakh. Temperature exceeding 100 OC has been encountered in both these areas at the surface under moderately high pressure. The deepest well drilled in these areas is 385 m deep. Both these areas are presently being developed in stages by ONGC Energy Center. First objective is to drill to about 1000 m and carryout resource evaluation and reservoir engineering studies. This is to be followed by installation of a 1 MW proto-type pilot power generation plant at Puga using appropriate technology. This may subsequently be upscaled to at least 5 MW, followed by commercialization of Puga geothermal energy. Availability of hydropower from Nimoo-Bazgo has eased the power scarcity of Ladakh to some extent. During summer the available hydropower is good enough to cater to the needs of Ladakh (Leh district in particular). The woes of the local populace are during the winter period when the power demand is at the peak, but availability is at the minimum due to freezing of rivers resulting in 70 % less hydropower generation from Nimoo-Bazgo. The alternative is diesel power generation which causes all pollution-related problems. These power generation and pollution related problems may only be resolved if geothermal resources of Ladakh are harnessed to their optimum capacity. In addition to providing power, geothermal resources of Ladakh may also be used for various direct applications. These resources may also play a significant role in enhancing the tourism-related avenues in Ladakh.

Events & News

Skill Council for Green Jobs



Dr. Praveen Saxena (CEO), SCGJ addressed at the 13th World PetroCoal Congress & 4th World Future Fuel Summit 2023 on 15-16 Feb 2023.

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At #ETFutureofJobs 2023, watch Arpit Sharma, COO, Skill Council for Green Jobs, Ministry of Skill Development & Entrepreneurship talk about the roadmap for enabling 50 million green jobs by 2030 & closing India's sustainability skill gap. [@mywheebox](http://etfoj.com)



At ET Future of Job, on Feb 23, Mr. Arpit Sharma, COO, SCGJ given talk on roadmap for enabling 50 million jobs by 2030



"Hon'ble Prime Minister has addressed through Webinar on Union Budget 2023- 'Urban Planning, Development, and Sanitation - Strategies for Implementation" on March 1, 2023. The SafaiMitra Suraksha (Manhole to Machine Hole) project is now underway.



Skill Council for Green Jobs in partnership with USAID's South Asia Regional Energy Partnership (SAREP), completed a day-long, in-person training workshop on 'Techno-economic Considerations for the Design of Green Hydrogen Projects' in New Delhi.

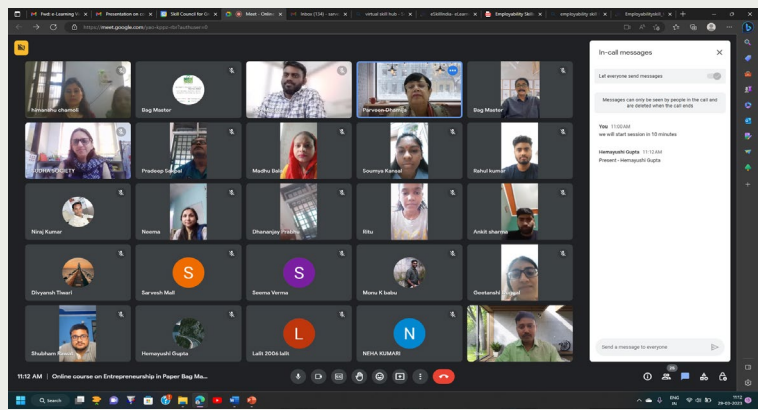


American India Foundation livelihoods event, 'Future of Livelihoods' was successfully conducted on 15th of March 2023 in India Habitat Centre at New Delhi. SCGJ was the Knowledge Partner in this event.

Hon'ble Union Minister for Women and Child Development, Smt. Smriti Zubin Irani inaugurated the event. Mr. Mathew Joseph, Country Director, AIF, welcomed her. Dr. Praveen Saxena, CEO, Skill Council for Green Jobs (SCGJ) shared his thoughts in the panel discussion on 'Women as enablers of the transition to a green economy.'



Online Training Programme on Green Hydrogen-06th to 10th March 2023



Online Training on Qualification of Paper Bag Maker-Micro Entrepreneur Dated 27th March to 31st March 2023



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