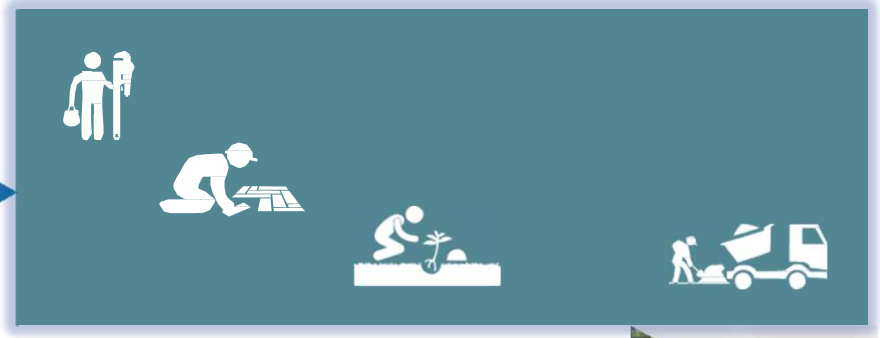
Skill India
कौशल भारत-कुशल भारत

GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

SCGJ
SKILL COUNCIL FOR GREEN JOBS
ISO 9001 : 2015 CERTIFIED



Annual Report 2018-19

Solar Skill Competition at Renewable Energy Expo

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Governing Council

सत्यमेव जयते

Ministry of Skill Development and Entrepreneurship | Ministry of New and Renewable Energy | Ministry of Power | Ministry of Drinking Water and Sanitation

CII Confederation of Indian Industry

N·S·D·C National Skill Development Corporation Transforming the skill landscape

INDUSTRY

IREDA | CVC Capture Value Creation | NIWE | ReNew Power | Vestas | SUZLON Powering a Greener Tomorrow | NIAGARA | JAKSON Empowering People | Growdiesel Fuel Forever

INDUSTRY ASSOCIATIONS

IWTMA Indian Wind Turbine Manufacturers Association | ieema your link to electricity | APH - Regency Power Group | FINER | Climate Parliament Legislators working worldwide to combat climate change

From the desk of Chairman, Skill Council for Green Jobs

Incentivise green businesses based on economic cost of pollution

For millenniums, ecological balance was maintained by the nature itself, which was disrupted by the advent of the industrial era. Thereafter, unrestrained growth in industrialization, vehicular transportation, exploitation of natural/ mineral resources and unplanned urbanization disturbed the harmonious relationships between the environment and human beings. This disruption was not immediately manifested, since, for most of the 20th Century, economic progress was limited to the "western economies", constituting a small share of population as well as geographical area. The impact of lasting damage like ozone layer, greenhouse gas emissions and deforestation came into public consciousness towards the end of the 20th Century and lead to UN protocols. However, this coincided with saturation in economic growth in the "developed economies", while large emerging economies were going through their growth phase. Hence, restraints on "developing economies" are perceived, to some extent, as a form of "neo colonialism".

Furthermore, even within the "emerging economies", there is lack of congruence as to what represents "sustainable development". For most governments, alleviation of poverty and socio-economic development takes priority and they tend to "slur over" environment damage, which is rationalized as "small sacrifice for larger good". While there is merit in such school of thought, the costs of environment degradation are so high that an unambiguous approach is required to revive a balanced relationship between human activity and the environment. This necessitates widespread community awareness of the feasibility to adopt judicious exploitation of natural resources along with restraint in consumption as well as increased use of regenerative resources, without compromising on economic or lifestyle needs.

Ushering in new set of societal values needs to be done in calibrated manner and with tenacity. It's easier to achieve traction with issues that are manifest in public consciousness. Air pollution, water scarcity and untreated municipal solid waste impact health of citizens in most cities of India. Hence, highlighting these environment issues, analyzing their causes and showcasing efficacy of remedial measures based on advanced technologies could catalyze widespread awareness and broad-based acceptance. It's emphasized that this needs to be done in a holistic and technology agnostic manner avoiding knee-jerk reaction or eschewing hype, which is a distinct risk with the influence that social media now has on citizens and policy makers.

In case of "Clean Air", particulate emissions from Diwali crackers and vehicles occupy significantly higher mindshare than their actual contribution to particulate emissions. Green crackers and green transport systems are definitely to be mandated and incentivized. At the same time, there needs to be recognition that particulate emissions linked to inefficient burning of biomass (including stubble burning) and construction activity are equally critical

issues, which cannot be addressed only through environment laws. There is need to put an economic cost on such environment pollution and resultant health hazards, which should set the norm for extending fiscal incentives to "Green Businesses" that mitigate such environment pollution. Advanced bio-fuels from bio-waste, if adequately incentivized, would make an economic case for organized collecting, aggregating and processing of biomass/ agri-waste to assured quality solid/ gaseous/ liquid biofuel products that can replace fossil fuels at affordable prices. Likewise, green construction materials and construction practices, if incentivized, would mitigate adverse environmental impact of buildings and infrastructure projects.

"Clean Water" availability is perhaps the biggest challenge that India faces. Niti Aayog's "Composite Water Management Index (CWMI)" Report of 14th June 2018 indicates that (i) 600 million Indians experience high to extreme water stress (ii) 75% households do not have access to drinking water on premises, while 84% of rural households do not have piped access (iii) 70% of water is contaminated, which ranks India as 120 out of 122 countries in terms of water quality. The crisis is huge and its imperative that water conservation and treatment/ re-use is rapidly scaled up. Behavioral change in water use can come only though the levers of pricing and controlled supplies, while extending DBT support to economically weaker sections of society. Rain water harvesting and used water treatment and re-use (for all applications, beyond those involving human intake) must be mandated for all establishments, commercial and industrial (C&I) as well as residential. To achieve this, apart from laws and regulations, it is necessary to establish an enabling eco-system, comprising green entrepreneurs and supportive financing instruments. This will enable implementation of sustainable water management schemes under "green business" framework, with efficacy and accountability. Likewise, for water conservation in agriculture, solar irrigation pumps scheme must mandate downstream "micro-irrigation" systems, which will incentivize low water intensive farming.

"Waste Management" has seen a reasonable amount of traction, through the Swatch Bharath Abhiyan. However, there is need to institutionalize systems and introduce technology interventions to ensure (i) source segregation of solid waste (ii) collection and aggregation of segregated waste (iii) appropriate processing of green waste along with controlled disposal of segregated 'dry' waste and hazardous waste (iv) deployment of advanced bio-technologies for higher value products from processing solid waste. In case of solid waste, too, implementation should be under "green business" framework, with efficacy and accountability.

In conclusion, I will recount a Cree Indian proverb, "Only when the last tree has died and the last river has been poisoned and the last fish has been caught, will we realize we cannot eat money" as well as quote Robert Swan, "The greatest threat to our planet is the belief that someone else will save it".

KOLLURU KRISHAN
Chairman SCGJ

INDIA creates history at the World Skills competition in Russia Skill Council for Green Jobs takes immense pride in congratulating young S Aswatha Narayana, a student of CV Raman college of Engineering, who represented INDIA in Water Technology Skill at the World Skills Competition 2019 in Russia and bagged the *GOLD* Medal for the country.

1. INTRODUCTION

Internationally, the year 2018 saw a relatively stable market for renewable energy technologies. Total renewable power capacity grew at a consistent pace compared to 2017, and the number of countries integrating high shares of variable renewable energy (VRE) continued to rise. Corporate sourcing of renewables more than doubled compared to 2017, and renewables have spread in significant amounts all around the world.

Renewable energy has been established globally as a **mainstream source of electricity** generation for several years. The estimated share of renewables in global electricity generation was more than 26% by the end of 2018. Net capacity additions for renewable power were higher than for fossil fuels and nuclear combined for a fourth consecutive year, and renewables now make up more than one-third of global installed power capacity. This is due in part to stable policy initiatives and targets that send positive signals to the industry, along with decreasing costs and technological advancements.

The Indian NDC brings a huge responsibility on the country and equally big opportunity for green business and poses skilled man power requirement. The year 2018-19 ended with a total Installed Capacity of 356.81 GW which includes 226 GW from Thermal, 0.454 GW from Hydro, 0.067 GW from Nuclear and 78.35 GW from various Renewable Energy Sources. The 78.35 GW Installed Capacity from renewable energy includes 35.81 GW from wind energy, 28.68 GW from solar energy and 12 GW from biomass, small hydro and waste to energy.

India's NDC's center around its policies and programmes related to promotion of clean energy, especially renewable energy, enhancement of resource efficiency (encompassing energy, water, materials & waste streams). This envisages adoption of "circular economy" and development of less carbon intensive and resilient cities/ villages, promotion of waste to wealth and enhancement of carbon sink through sustainable forestry management and enhancement of tree cover.

India, at COP 21 in Paris, declared goal of reducing the emissions intensity of its GDP by 33 to 35% by 2030 and enhancing share of Renewable power installed capacity to 40 % by 2030.

The renewable power target would entail additional capacity creation of about 200 GW by 2030, largely in Solar & Wind Power, with increasing emphasis on distributed solar power, which will create a large demand for skilled human resource, on pan India basis

Likewise, Urban/ Rural Waste & Water management, adopting resource efficiency measures (including recycling/ reuse) will lead to significant abatement in GHG mitigation. Such programs will need to be implemented under "Green Businesses" framework for efficiency & efficacy, which will lead to migration of large, informal, labor force (nearly 3% of the population) to organized sector, within MSME's.

1. INTRODUCTION

1.1 Skill Council for Green Jobs

The Skill Council for Green Jobs is the Sector Skill Council set up as part of Skill India Mission for the purpose of developing competencies /skills in the domain of renewable energy, sustainable development and waste management. It is responsible for quality assurance through accreditation of the skills acquired by trainees, curriculum development for the skills training, qualification framework and setting of standards and benchmarks, recruitment and placement of trained and skilled workforce, as well as a data collection, management and provider to the industry.

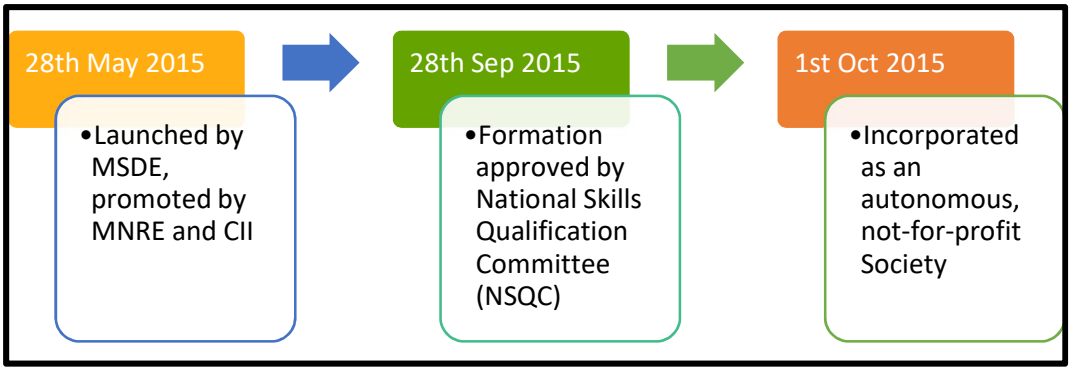
SCGJ is a national level organization with a government-industry interface and partnership with stakeholders from industry, labour as well as the academia. Its activities are linked to Skill India Mission, National Solar Mission, Swachh Bharat Mission and Make in India initiative of Government of India. SCGJ is closely interacting with Ministry of New and Renewable Energy, Ministry of Environment, Forest & Climate Change, Ministry of Urban Development, Ministry of Water Resources and Niti Aayog.

SCGJ, incorporated on 1st October 2015, is an autonomous body and registered society launched by the Ministry of Skill Development and Entrepreneurship to supplement the Skill India Mission. The Council is an industry led and industry driven organization which is promoted by the Ministry of New and Renewable Energy and Confederation of Indian Industry.

All jobs which are contributing towards sustainable development and for mitigation of climate change are categories as Green Jobs. Accordingly, the Skill Council for Green Jobs has been mandated to address following sectors:

1. INTRODUCTION

SCGJ activities are targeted towards Sustainable Development Goals. The SDGs and targets are integrated and indivisible, global in nature and universally applicable, taking into account different national realities, capacities and levels of development and respecting national policies and priorities. Targets are defined as aspirational and global, with each government setting its own national targets guided by the global level of ambition but taking into account national circumstances. Each government will also decide how these aspirational and global targets should be incorporated in national planning processes, policies and strategies. It is important to recognize the link between sustainable development and other relevant ongoing processes in the economic, social and environmental ,fields.



2.0 Activities of SCGJ during 2018-19

The scope of Green Jobs cuts horizontally across other industrial sectors. These include adoption of green technology or environment friendly practices for existing industrial processes. This can be characterized either by an environment friendly finished product of that business, or the use of environment friendly processes to develop and deliver the final product or service.

The activities of the Skill Council have been broadly categorized under following heads:

SCGJ has identified the skill gaps in the Solar PV, Solar Thermal, Wind, Small Hydro, Clean cooking, Bio mass, waste management, water management Sectors in manufacturing, business development and installation & maintenance. The purpose is to identify manpower requirement for the industry and the type of skill and training they require.

2.0 Activities of SCGJ during 2018-19

The SCGJ has been actively working towards achieving all ABP targets. It ful fills all infrastructural requirements and Governance methodology. Overall annual targets in terms of numbers as projected in the ABP – 2018-19 and achievements are summarized below:

S.No	Activity during 2018-19	Target	Achievement. Q1 - Q4
1	States in which the State Office established in FY 18-19	1	1
2	Total Number of Personnel added in HQ FY 18-19	1	1
3	GC Meetings Periodicity	4	2
4	News Letter	4	4
5	Total Trainers Certified in FY 18-19	1000	993
6	Total Assessors Certified in FY 18-19	200	117
7	Total QPs Merged in FY 18-19	0	0
8	Total QPs Retired in FY 18-19	0	0
9	New QPs added in FY 18-19	14	10
10	Total Curriculum Created in FY 18-19	14	15
11	Total Content Created in FY 18-19	4	2
12	Total Trainer Mannuals Created in FY 18-19	4	3
13	Total Online Content Created in FY 18-19	6	6
14	Total Exhibitions Participated in FY 18-19	12	14
15	Total Job Melas Participated in FY 18-19	12	14
16	Total Articles Published in Press in FY 18-19	14	20
17	Total Posts on Facebook/ Tweets in FY 18-19	560	940
18	Total Industry members added in FY 18-19	120	132
19	Total Number of Jobs Aggregated in FY 18-19	75000	29,000
20	Total Number of Companies Covered in FY 18-19	121	99
21	Total Certifications in PMKVY -2 in FY 18-19 -SST	12,500	10,537
22	Total Certifications in PMKVY -2 in FY 18-19 –RPL	40,000	8299
23	Total Certifications in PMKVY -2 in FY 18-19 – Special projects	1,150	368
24	Total Certifications in other GoI Schemes in FY 18-19	13,529	23,521
25	Total Certifications in State Government Schemes in FY 18-19	2,100	1,927
26	Total Certifications in Non- Government Funded Programs in FY 18-19	4.500	5461
27	Total Apprentices aligned in FY 18-19	1,500	0
28	Total Companies aligned in FY 18-19	25	16
29	Total Candidates placed in FY 18-19	11,900	2,580
30	Skill Gap studies during 18-19	0	1
31	Total future job roles developed	4	2

2.0 Activities of SCGJ during 2018-19

Other Major Achievements of SCGJ during 2018-19:

(a) Regional Center and Centers of Excellence

In the target for the year 2018-19, SCGJ has projected setting up of 1 regional center. The SCGJ has set up one regional center cum Centre of Excellence at Bengaluru which is being developed for research in skilling requirements and supplementing the skill gap analysis specifically in the sustainable development domain. The center is to be utilized to conduct Training of Trainers (ToT), Training of Master Trainer (ToMT) for the QP / NOS developed by SCGJ.

SCGJ has now its presence in three regions viz.in **Bengaluru (Southern region), Kolkata (Eastern region) and Ahmedabad (Western Region)** to widen its outreach to industry as well as training partners.

(b) Consultancy Projects

Having initiated its core activities, SCGJ has expanded its activities to taking up consultancy projects in the area of Skilling for Green Jobs Sectors. Following are some of the assignments carried out by SCGJ during 2018-19:

Induction Program for IREDA Officials

A one month long Induction Program for Officers of Indian Renewable Energy Development Agency was organized by SCGJ from 19th June – 13th July, 2018 at IREDA office, New Delhi. The program was coordinated by Skill Council for Green Jobs in close association with IREDA. This was a special assignment given by IREDA to SCGJ in view of its vast experience in Training leading to Certification. The one month program provided an opportunity to the participants to interact with senior officials of IREDA and various corporate experts.

2.0 Activities of SCGJ during 2018-19

Simultaneous intervention of renewable energy systems and skilling for smart model villages of Haryana adopted by Hon'ble President of India – Project extended to 45 more villages.

The Rashtrapati Bhawan initiative to develop Smart Gram Model in five villages namely Daulha, Harchandpur, Alipur, Tajnagar and Rojka Meo selected by Govt. of Haryana has been extended to 45 more villages of the same vicinity. SCGJ, was given the mandate to study the energy and environment patterns of the villages and implement various concepts of green energy generation, energy conservation, waste management, and related skill development activity. As part of extension of Smart gram initiative, SCGJ prepared sustainable development plan for these 45 villages selected on peripheral fringes of the existing five villages in five clusters in a range of 5 KM which included providing improved cook stoves to every households and mechanical water filter, 10 Urja Shops(2 in each cluster), setting up of 10 Material Recovery Facility(MRF) for solid waste management (2 in each cluster) and 225 E-Rickshaw Entrepreneur(5 per village) along with skilling and training of the manpower to employed for managing these activities. The project has been sanctioned and is receiving funding from Rural Electrification Corporation Limited(RECL) under their CSR mandate. After completing the base line study, implementation of the project has started. About 6000 Induction Stoves and 20 water purifiers have been distributed in the villages. It is proposed to distribute about 12,000 Induction Stoves in the villages.

The SPV roof top system were installed at all the locations envisaged in the project. The villages were visited by a team from REC and are very much satisfied by the progress. SCGJ has approached REC to release second installment of funds and extend the duration. Extension of SPV project has been received.

Up-skilling SafaiKaramcharis under RPL programme supported by NSKFDC

National Safai Karamcharis Finance & Development Corporation (NSKFDC) is a wholly owned Govt. of India undertaking under the Ministry of Social Justice & Empowerment (M/o SJ&E). NSKFDC is an Apex Corporation for the all-round socio- economic upliftment of the Safai Karamcharis, Scavengers and their dependents throughout India.

2.0 Activities of SCGJ during 2018-19

SCGJ has developed a Training Delivery Plan of 35 hrs for upskilling Safai Karamchari under Recognition of Prior Learning (RPL) programme. It covers important topics such as Mechanized Cleaning, Key Provisions of Manual Scavenging Act 2013 and Mechanized and Safe Cleaning of Sewer and Septic Tanks, Personal Health and Safety etc. A pictorial participant handbook on the safe sanitation cleaning processes has also been prepared. A similar Training Delivery Plan of 35 hrs for upskilling waste pickers have been developed under Recognition of Prior Learning (RPL) programme.

During the year 2018-19, NSKFDC has sanctioned RPL trainings of 5000 safaikaramcharies and 3000 waste pickers. The implementation of this project started with the help of TPs of SCGJ from 2nd October, 2018. Further SCGJ has conducted 200 workshops on "Prevention of Hazardous Cleaning of Sewers and Septic Tanks "as a special assignment from NSKFDC.

iv World Bank Grid connected Rooftop SPV Technical Assistance Programme.

Skill Council for Green Jobs is the capacity building and skill development partner under The World Bank Grid connected Rooftop Solar PV Technical Assistance Program. Under the guidance of MNRE, the World Bank is supporting the GoI's program to generate electricity from the widespread installation of GRPV by lending $625 million to State Bank of India. In addition to lending, Ministry of New & Renewable Energy (MNRE) and the World Bank SBI have appointed Ernst & Young Consortium as the Project Management Consultant (PMC) for managing the administration of this five-year TA program. EY Consortium comprises of EY, SCGJ, IDAM Infrastructure, Emergent Ventures India, GSES and Edelman. This is expected to mobilize finance for solar rooftop projects and facilitate the Government of India in achieving its target of 40 Gigawatts (GW) of solar rooftop by 2022, as a part of its wider goal of 100 GW under the Jawaharlal Nehru National Solar Mission.

2.0 Activities of SCGJ during 2018-19

V Skilling and Training in the Bio-energy Sector GOBARdhan Scheme

Ministry of Drinking Water and Sanitation (MDWS) had announced implementation of GOBARdhan scheme for galvanizing organic bio-resources especially animal waste for its gainful utilization so as to generate employment and additional income for farmers. The scheme envisages setting up of biogas plants and skilling and training of local youth as Biomitras for collection and aggregation of this waste. To cater to skilled man power requirement for implementation of GOBARdhan scheme, SCGJ has developed 4 Qualification Packs(QPs) for various job roles related to collection, aggregation and utilization of farm waste like animal dung and agro residue as per NSQ alignment.

In order to orient the Self Employed/ Turnkey Workers actively involved in installation of biogas plants, SCGJ organized an Orientation programme on 24th April, 2018 at Biogas Development Training Centre (BDTC), Department of Renewable Energy, Punjab Agricultural University. This was followed by a two-day RPL training for the 10 trainees on 25th and 26th April 2018.

National Workshop on Skilling under GOBARdhan

Skill Council for Green Jobs (SCGJ) supported the National Workshop on Skilling under GOBARdhan organized by Ministry of Drinking Water and Sanitation (MDWS) and National Skill Development Corporation (NSDC) on 30th July 2018 on the need of trained manpower and local entrepreneurship development for various components of GOBARdhan scheme. During the workshop, 4 Qualification Packs (QPs) developed by SCGJ for various job roles related to collection, aggregation and utilization of farm waste like animal dung and agro residue as per NSQ alignment were discussed.

Inaugurarion workshop on skilling under Gobar dhan scheme Mr K P Krishnan Secretary, Ministry of skill development; Secretary, Ministry of drinking water an santitarion and other officers from the ministry.

2.0 Activities of SCGJ during 2018-19

(c) Advocacy

SCGJ participated in the following prominent Skill related and Green Businesses related Events during April 2018 to March, 2019:

- Working Group – Training & amp; Capacity Development -1st Meeting-Policy Dialogue for an Energy Efficient India 2030 at CII, 9th April 2018 New Delhi
- Regional Workshop organized by NITI Aayog on 23rd April 2018 at Kolkata.
- India–Japan Industry & Energy Seminar at Hotel Taj Diplomatic Enclave, 1st May 2018 New Delhi
- Odisha skills conclave 6 – 7 May,2018 Centurion University, Bhubaneswar
- Indo – US Energy Cooperation , 17th May, 2018 , New Delhi
- 3rd Solar India 2018 Expo/ One Mega Event "Jobs and skills requirements for solar energy" on 24 May 2018, New Delhi
- Corporate Sustainability and the Sustainable development Goals (SDGs) held on June 03, 2018 at FICCI
- First Meeting of CII Task Force on Bioenergy at CII, 18th July 2018 New Delhi
- Business Advisory Committee Meeting at KASE Office 27th July 2018 Trivandrum
- National Workshop on "Skilling under Gobardhan" at IHC, 30th July 2018 New Delhi
- World Biofuel Day" programme at Vigyan Bhawan, 10th August, 2018 Delhi.
- The fourth edition of the International Off-grid Renewable Energy Conference (IOREC) in Singapore on 31 October and 1 November 2018 organized by IRENA
- The Asia Clean Energy Summit, Singapore on 31 October and 1 November 2018
- 8th CII Global Summit on Skill Development, 22-23 November 2018, Lucknow.
- 2nd Global RE-INVEST Renewable Energy Investors' Meet and Expo (2nd RE-INVEST) 3rd to 5th October 2018, Greater Noida.
- ENGAGE-Employers Network for Generating Aspirational & Gainful Employment, 'Skill in Jharkhand – Skilling for Future' 5th Decembe, 2018, New Delhi.
- Focus Group Discussion Assessing employment and skills need in the distributed renewable energy industry, 07 December 2018, New Delhi.
- Intersolar India 11-13 December 2018,Bangalore
- CII-DIPP National Forum 'Towards $1 Trillion Manufacturing Economy' 17-18 December 2018, New Delhi
- Exhibition cum Conference "Sigma Summit 2019" on "Solar Energy Applications and Innovations" 28th – 30th January,2019 New Delhi.
- RECOMMERCE EXPO 2019, 1st February, 2019, Bengaluru.

2.0 Activities of SCGJ during 2018-19

Balance Sheet of Skill Council for Green Jobs FY 2018-19

2.0 Activities of SCGJ during 2018-19

SKILL COUNCIL FOR GREEN JOBS
BALANCE SHEET AS AT 31.03.2019

(Amount - Rs.)

CORPUS / CAPITAL FUND AND LIABILITIES	Schedule	31.03.2019	31.03.2018
CORPUS / CAPITAL FUND	1	8,359,782.77	5,630,000.00
RESERVES AND SURPLUS	2	-	-
EARMARKED / ENDOWMENT FUNDS	3	25,638,969.47	28,090,548.77
SECURED LOANS AND BORROWINGS	4	-	-
UNSECURED LOANS AND BORROWINGS	5	1,662,375.00	1,662,375.00
DEFERRED CREDIT LIABILITIES	6	-	-
CURRENT LIABILITIES AND PROVISIONS	7	18,455,456.23	4,286,851.76
TOTAL		**54,116,583.47**	**39,669,775.53**
ASSETS			
FIXED ASSETS	8	10,383,887.61	16,738,271.76
INVESTMENTS - FROM EARMARKED / ENDOWMENT FUNDS	9	-	-
INVESTMENTS - OTHER	10	-	-
CURRENT ASSETS, LOANS, ADVANCES ETC.	11	43,732,695.86	22,931,503.77
MISCELLANEOUS EXPENDITURE (to the extent not written off or adjusted)		-	-
TOTAL		**54,116,583.47**	**39,669,775.53**
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		

The Notes form an integral part of these financial statements.
As per our separate report of even date annexed.

For V.D. Tiwari & Co.
(FRN: 002382N)

CA Pushpinder Tiwari
Partner
M.No: 503170

Place: New Delhi
Date: 11.09.2019

For SKILL COUNCIL FOR GREEN JOBS

Chairman Treasurer Secretary

2.0 Activities of SCGJ during 2018-19

SKILL COUNCIL FOR GREEN JOBS
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2019

(Amount - Rs.)

INCOME	Schedule	01.04.2018 To 31.03.2019	01.04.2017 To 31.03.2018
Income from Sales / Services	12	-	-
Grants / Subsidies	13	-	-
Fees / Subscriptions Received	14	70,046,748.00	35,676,464.91
Income from Investments (Income on Invest. from earmarked/endow. Funds transferred to Funds.)	15	-	-
Income from Royalty, Publication etc.	16	-	-
Interest Earned	17	662,585.98	55,921.00
Other Income	18	1,188,200.00	-
Increase / (decrease) in stock of Finished goods and works-in-progress	19	-	-
TOTAL (A)		**71,897,533.98**	**35,732,385.91**
EXPENDITURE			-
Establishment Expenses	20	56,376,705.90	32,390,676.00
Other Administrative Expenses etc.	21	6,496,104.16	2,904,960.66
Expenditure on Grants, Subsidies etc.	22	-	-
Interest	23	25,133.00	1,016.00
Depreciation (Net Total at the year-end - corresponding to Schedule 8)		6,809,808.15	263,061.93
		69,707,751.21	**35,559,714.59**
Excess of Income over Expenditure/(Excess of Expenditure over Income)		2,189,782.77	172,671.32
Transfer to Earmarked/Endowment Funds - Schedule 3		(2,189,782.77)	(172,671.32)
			-
Net Surplus/Deficit		**0.00**	**0.00**
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS	25		

The Notes form an integral part of these financial statements.
As per our separate report of even date annexed.

For V.D. Tiwari & Co.
(FRN: 001882N)

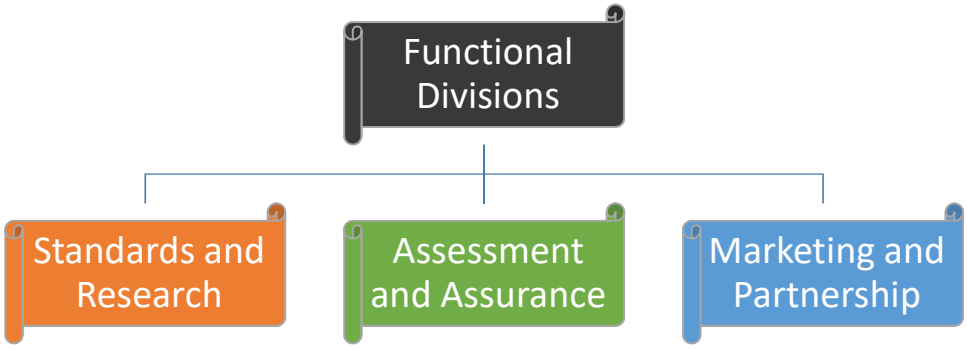
CA Pushpinder Tiwari
Partner
M.No: 503170

For SKILL COUNCIL FOR GREEN JOBS

Chairman Treasurer Secretary

Place: New Delhi
Date: 11.09.2019

3.0 DIVISION WISE RESPONSIBILITY

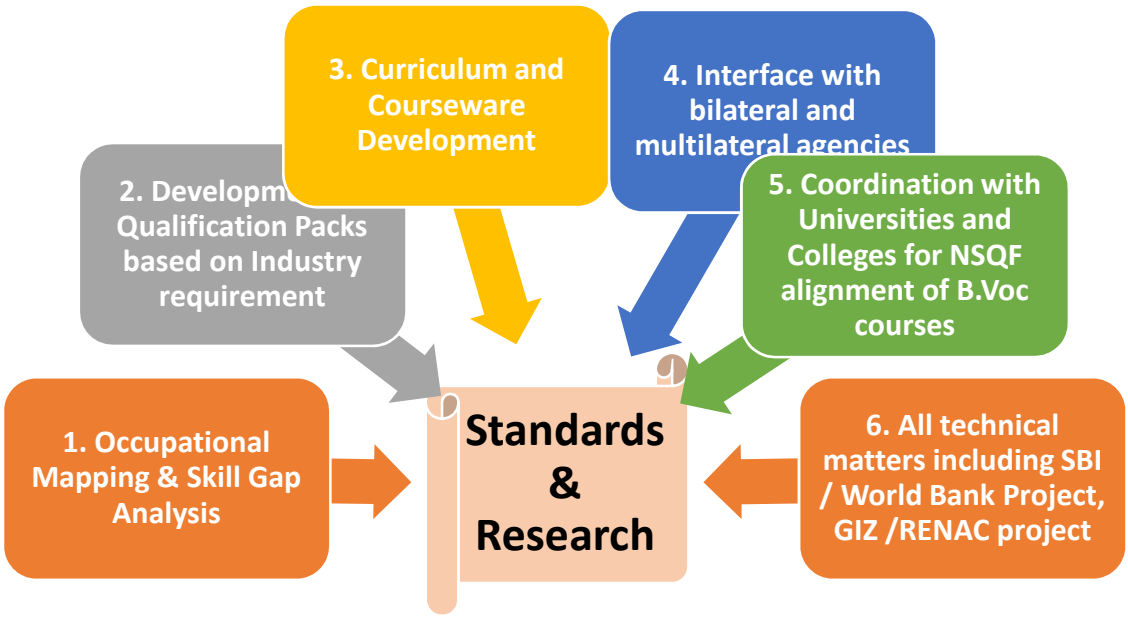


Major functional Responsibilities of the Each Division:

Standards and Research	Assessment and Assurance	Marketing and Partnership
•Occupational Mapping and Skill Gap Analysis •Development of Qualification Packs based on Industry requirement •Curriculum and Courseware Development •Interact with bilateral and multilateral agencies •Coordination with Universities and Colleges for NSQF alignment •All technical matters •Implementation of SBI/World Bank project •Implementation of GIZ project	•Affiliating suitable training partners and assessment agencies •Organization of meetings of Affiliation Sub-committee •Mapping of Training Centres on National Portal with unique identification numbers •Training of Trainers •Planning of Delivery of Training by affiliated Training Centres as per annual targets •Assessment through third party •Certification of candidates •Coordination with NSDC and uploading of data on National Portal	•Improving industry linkages in all the sub-sectors •Finding opportunities to Partner with organizations, institutes & Agencies •Improving visibility of Skill Council for Green Jobs •Organization of AGM and Governing Council Meetings •All matters relating to Membership of SCGJ, including growth •MoUs with Industry and other Skill Development bodies •Participation in Conferences and Exhibitions •Organizing sector specific events •RPL Type 4 “BiCE” Certification Program under PMKVY.

3.1 Standards & Research Group

3.1 The Standards and Research is the Technical Wing of Skill Council for Green Jobs the major responsibility and achievements during 2018-19 of Standards and Research group are as follows:



The Standards and Research Group develops 'National Occupational Standards' and 'Qualification Packs' as per the 'National Skills Qualification Framework' (NSQF). Since Qualification Packs are developed based on Job Roles available in the industry, this process involves extensive interface with the Sector specific industry, organizations and experts. The training is delivered in alignment with QP/NOSs developed by SCGJ. The Council has also developed Model Curriculum and Courseware for its Qualification Packs to supplement the training programs.

3.1.2 Major Achievements during 2018-19

(a) <u>Occupational Mapping and Skill Gap Analysis</u>

- SCGJ has initiated Occupational Mapping, Skill Gap Analysis and Development of National Occupational Standards in Electric vehicles and Solar PV-Wind Hybrid domain joining hands with DFID and KPMG.

- SCGJ has been actively involved in providing technical inputs for Skill Gap studies carried out by Natural Resources Defense Council (NRDC) and Council on Energy, Environment and Water (CEEW).

3.1 Standards & Research Group

- SCGJ was closely working with NSDC and Urban Management Centre (UMC) for Occupational Mapping, Skill Gap Analysis and Development of National Occupational Standards in Faecal Sludge and Sewage Management (FSSM) sector and the study has been complete and based on the study there have been development of Qualification Packs.

- **(b) Development of Qualification Packs based on Industry requirement**

  - In house development of 19 Qualification Packs
  - Total development of 49 Qualification Packs
  - Borrowing of 2 Qualification Packs
  - Obtained more than 1350 validations for 49 QPs developed so far.

Solar Photovoltaic
- Ground Mount Solar PV
- Rooftop Solar PV Power Plants
- Solar Off Grid Systems
- Solar PV Module Manufacturing

Solar Thermal
- Domestic water heating system
- Industrial Solar Thermal systems

Wind Power
- Site survey
- Wind power plants
- O&M of wind power plants

Clean Cook Stoves
- Improved Cook Stove

Water Management
- Wastewater Treatment plants

Waste Management
- Solid Waste Mangement

3.1 Standards & Research Group

b. Comprehensive list of Qualification Packs developed so far:

SCGJ has developed 49 Qualification Packs and adopted 2 QPs in following sub-sectors

Sl. No.	Qualification Pack Title	QP Code	NSQF level	Number of Industry validations	QRC approval date
1	**Solar PV Installer (Suryamitra)**	SGJ/Q0101	4	35	23-12-2015
2	**Solar PV Installer - Electrical**	SGJ/Q0102	4	35	23-12-2015
3	**Solar PV Installer - Civil**	SGJ/Q0103	4	35	23-12-2015
4	**Rooftop Solar Photovoltaic Entrepreneur**	SGJ/Q0104	6	32	23-12-2016
5	**Solar Proposal Evaluation Specialist**	SGJ/Q0105	7	41	23-12-2016
6	**Rooftop Solar Grid Engineer**	SGJ/Q0106	5	34	23-12-2016
7	**Solar PV Business Development Executive**	SGJ/Q0107	5	37	17-05-2017
8	**Solar PV Site Surveyor**	SGJ/Q0108	6	37	17-05-2017
9	**Solar PV Structural Design Engineer**	SGJ/Q0109	5	37	17-05-2017
10	**Solar PV Designer**	SGJ/Q0110	7	37	17-05-2017
11	**Solar PV Project Helper**	SGJ/Q0111	2	34	14-06-2017
12	**Solar PV Engineer (Option: Water pumping system)**	SGJ/Q0112	5	37	14-06-2017
13	**Solar Site In-charge**	SGJ/Q0113	6	37	14-06-2017
14	**Solar PV Project Manager (E&C)**	SGJ/Q0114	7	37	14-06-2017
15	**Solar PV Maintenance Technician - Electrical (Ground Mount)**	SGJ/Q0115	4	37	14-06-2017
16	**Solar PV Maintenance Technician – Civil (Ground Mount)**	SGJ/Q0116	4	37	14-06-2017
17	**Solar PV O&M Engineer**	SGJ/Q0117	5	38	14-06-2017
18	**Solar Off Grid Entrepreneur**	SGJ/Q0118	5	36	14-06-2017
19	**Solar Lighting Technician (Options: Home lighting system / Street lights)**	SGJ/Q0201	4	32	23-08-2017
20	**Solar PV Manufacturing Technician**	SGJ/Q0119	4	37	17-05-2017

3.1 Standards & Research Group

Sl. No.	Qualification Pack Title	QP Code	NSQF level	Number of Industry validations	QRC approval date
21	Solar Domestic Water Heater Technician	SGJ/Q0601	4	36	17-05-2017
22	Solar Thermal Plant Installation & Maintenance Technician	SGJ/Q0602	4	38	14-06-2017
23	Solar Thermal Engineer -Industrial Process Heat (Option: Consultant)	SGJ/Q0603	5	38	14-06-2017
24	Improved Cookstove Installer	SGJ/Q2101	4	30	06-10-2016
25	Portable Improved Cookstove Assembler	SGJ/Q2102	3	30	25-07-2017
26	Portable Improved Cookstove Sales and Maintenance Executive	SGJ/Q2104	4	30	25-10-2017
27	Portable Improved Cookstove Distributor	SGJ/Q2105	6	30	25-10-2017
28	Recyclable Waste Collector and Segregator	SGJ/Q6101	4	31	06-10-2016
29	Safai Karamchari (Options: Wet Cleaning / Mechanised Cleaning)	SGJ/Q6102	3	36	28-06-2017
30	Waste Picker	SGJ/Q6103	3	30	07-04-2017
31	Wastewater treatment plant technician	SGJ/Q6601	4	35	23-12-2015
32	Wastewater treatment plant Helper	SGJ/Q6602	3	35	23-12-2015
33	Assistant Planning Engineer- Wind Power Plant	SGJ/Q1201	4	30	24-11-2017
34	Site Surveyor Wind Power Plant	SGJ/Q1202	6	31	24-11-2017
35	Construction Technician (Civil)- Wind Power Plant	SGJ/Q1402	4	31	24-11-2017
36	Construction Technician (Mechanical)- Wind Power Plant	SGJ/Q1401	4	31	24-11-2017
37	Construction Technician (Electrical)- Wind Power Plant	SGJ/Q1403	4	31	24-11-2017
38	CMS Engineer- Wind Power Plant	SGJ/Q1501	4	31	24-11-2017
39	O&M Mechanical Technician-Wind Power Plant	SGJ/Q1502	4	31	24-11-2017
40	O&M Electrical & Instrumentation Technician –Wind Power Plant	SGJ/Q1503	4	31	24-11-2017

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3.1 Standards & Research Group

Sl. No.	Qualification Pack Title	QP Code	NSQF level	Number of Industry validations	QRC approval date
41	Animal Waste Manure Aggregator (Option: Biogas Plant Operator/Compost Plant Operator)	SGJ/Q6302	4	30	27-03-2018
42	Agri-residue Aggregator	SGJ/Q6201	4	30	27-03-2018
43	Biomass Depot Operator	SGJ/Q6207	4	30	27-03-2018
44	Manager- Waste Management (Elective: Biomass Depot/ Compost Yard/Dry Waste Center)	SGJ/Q6501	6	30	27-03-2018
45	Septic Tank Technician	SGJ/Q6402	4	31	30-11-2018
46	Desludging Operator	SGJ/Q6403	4	31	30-11-2018
47	Faecal Sludge Treatment Plant O&M Technician	SGJ/Q6404	4	31	30-11-2018
48	Paper Bag Technician	SGJ/Q6303	3	25	16-07-2019
49	E-Waste Recycling Entrepreneur	SGJ/Q6401	6	21	To be resubmitted
50	Solar Pump Technician	AGR/Q6701	4	Borrowed QP	
51	Social Media Executive	MES/Q0702	4	Borrowed QP	

(c) Model Curriculum and Courseware Development

- Total 49 Model curriculums have been developed for 20 Solar PV QPs, 3 Solar Thermal QPs, 8 Wind Energy QPs, 12 Waste Management QPs, 2 Water Management QPs and 4 Clean Cookstove QPs.

- Revision and submission of the Model Curriculums as per revised guidelines from NSDC

- Development of 20 curriculums for industry led Recognition of Prior Learning (RPL) certification programs on 10 Solar QPs, 7 Waste Management QPs, 2 Water Management QPs and 1 Clean cooking QP.

- Development of 14 Participant Handbooks for 9 Solar QPs, 3 Waste Management QPs and 2 Water Management QPs. Also, 7 Participant Handbooks are under development for 7 Waste Management QPs.

3.1 Standards & Research Group

Sl. No.	Name of the Qualification Pack	Availability of books
1	Solar PV Installer (Suryamitra)	Yes
2	Solar PV Installer – Electrical	Yes
3	Solar PV Installer – Civil	Yes
4	Wastewater Treatment Plant Technician	Yes
5	Wastewater Treatment Plant Helper	Yes
6	Solar Proposal Evaluation Specialist	Yes
7	Safai Karamchari (Options: Wet cleaning / Mechanised cleaning)	Yes
8	Waste Picker	Yes
9	Rooftop Solar Photovoltaic Entrepreneur	Yes
10	Rooftop Solar Grid Engineer	Yes
11	Solar Lighting Technician	Yes
12	Solar PV Project Helper	Yes
13	Solar PV Maintenance Technician - Electrical (Ground Mount)	Yes
14	Recyclable Waste Collector & Segregator	Yes
15	Animal Waste Manure Aggregator (Option: Biogas Plant Operator/Compost Plant Operator)	Under Development
16	Agri-residue Aggregator	Under Development
17	Biomass Depot Operator	Under Development
18	Manager- Waste Management	Under Development
19	Septic Tank Technician	Under Development
20	Desludging Operator	Under Development
21	Faecal Sludge Treatment Plant O&M Technician	Under Development

3.1 Standards & Research Group

(d) Bilateral and multilateral Activities

- Consortium Partner for implementation of the World Bank SUPRABHA TA program for Rooftop Solar sector being implemented through SBI
- Consortium Partner for implementation of the GIZ TROPHI II program for Rooftop Solar sector being implemented through RENAC.
- Jointly carried out the skill gap study and occupational mapping of Industrial Wastewater sector, with GIZ and National Productivity Council (NPC)
- Interactions with ISA, DFID, GIZ and GBCI for capacity building in solar, wastewater and green construction sector

(e) Coordination with Universities and Colleges for NSQF alignment of B.Voc. Degree programs

- Participation in Advisory Board Committee for curriculum alignment of B.Voc. Programme in Renewable Energy Technology and Management at:
  - Stella Maris College, Chennai, Tamil Nadu,
  - Pt Ravishankar Shukla University
  - St. Berchmans College, Changanacherry, Kerala.
- •Participation in Advisory Board Committee for curriculum alignment of B.Voc. Programme in Industrial Waste Management at Central University of Haryana.
- •Interaction with Pune University for incorporating the Green Skills component in their existing course B.Voc. in Renewable Energy Management.
- Interaction with Tezpur University for incorporating the Green Skills component in their existing course B.Voc. in Renewable Energy Management.

(f) Other Technical Matters

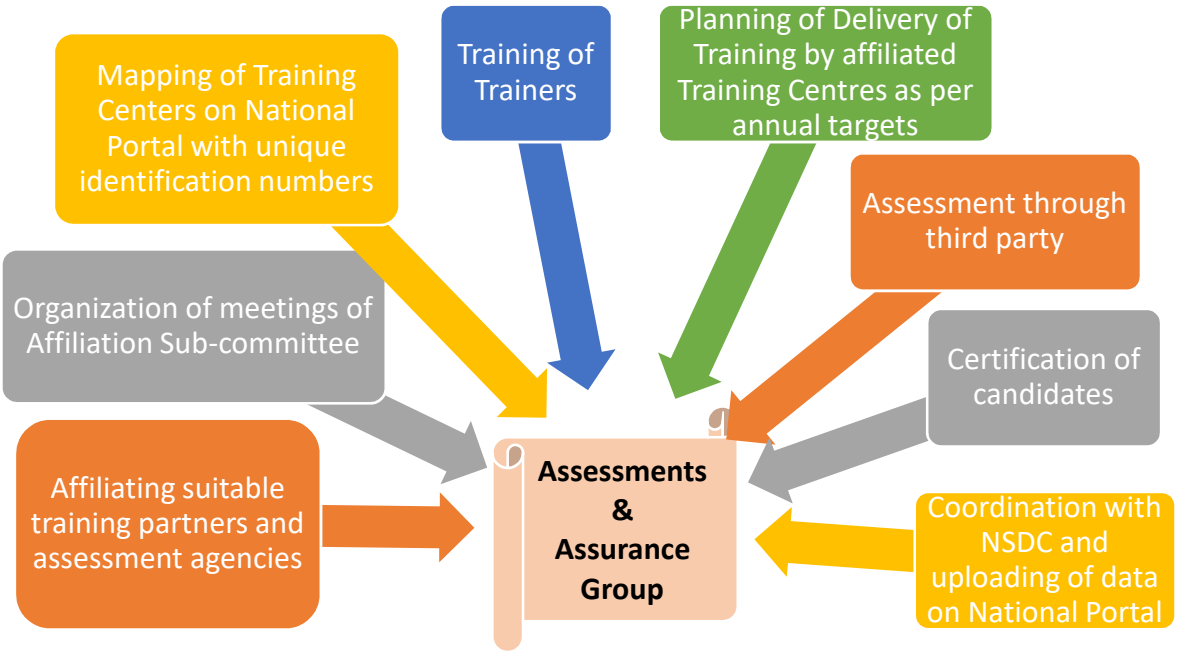
- Training of Master Trainers has been one of the major activities undertaken by SCGJ.
- One advance level ToMT involving 30 candidates was organized.
- Training of Trainers under the World Bank SUPRABHA program on the following 3 QPs,
  - Solar Proposal Evaluation Specialist,
  - Rooftop Solar Photovoltaic Entrepreneur and
  - Rooftop Solar Grid Engineer.

3.1 Standards & Research Group

- SCGJ has regularly participated in the training programs organized by the NISE, MNRE; GERMI, USAID and CBIP Centre of Excellence.
- Solar Skills competition organized on 19th September 2018 at Renewable Energy India (REI) Expo 2018, Greater Noida.
- Solar Skills Challenge on Rooftop Solar installation, Solar water pumping, Solar lighting and Solar power plant design, organized at Sigma Summit 2019, New Delhi.
- Solar Entrepreneurship challenge organized at Sigma Summit 2019, New Delhi, along with Sangam Atal Innovation Centre of Niti Aayog and Schneider Electric Foundation.
- Worked with IIT Bombay for rural livelihood project on decentralized solar energy solutions, for skill development, assessment and certification of the beneficiaries under the project.

3.2 Assessments & Assurance

3.2.1 The Assessment and Assurance Group operationalizes the national occupational standards and maintain the quality of the training programs. The major activities of this division is as follows :



3.2.2 Major Achievements during 2018-19

- Trained and Certified 9,171 Candidates under PMKVY 2.0
- Trained and Certified 14,270 Candidates under other Govt Schemes e.g., MNRE,NSKFDC,NULM , NBCFDC etc
- Trained and Certified 2140 Candidates under Paid Programs
- Trained and Certified 1869 Candidates under State Govt Funded Programs
- Conducted TOT of 169 Trainers

Cumulative Status

- Trained and Certified 81,529 Candidates since inception.
- Affiliated 529 Training Centres
- Empanelled 24 Assessments Agencies

3.2 Assessments & Assurance

Other Activities

(a) Development of Protocol for Affiliating Training Partners and Assessment Agencies

- The protocol developed by SCGJ for affiliation of training partners was further strengthened and aligned to NSDC's affiliation guidelines. It is online available on SCGJ website and the training partners were encouraged to send their applications online. However, it is mandatory to send a hardcopy for record purposes. New RFP has been floated for affiliation of Assessment Agencies as per new guidelines of NSDC.

- **(b) Training Partner Affiliation**

- Following internal examination and physical inspection, a total of 529 **Training Centers** have been filiated.
    - Some of the prominent Affiliated Training Partners include:
    - Punjab Agricultural University
    - Tamil Nadu Agricultural University
    - NIELIT Kolkata
    - SavitriBai Phule Pune University
    - NB Institute for Rural Technology, Tripura
    - DOSEC –TATA, Delhi
    - JSW Foundation (Jindal Group)
    - Engineering Staff College of India, Hyderabad
    - University of Petroleum and Energy Studies, UTTARAKHAND
    - Advanced Training Institute Calicut

(c) Centers of Excellence

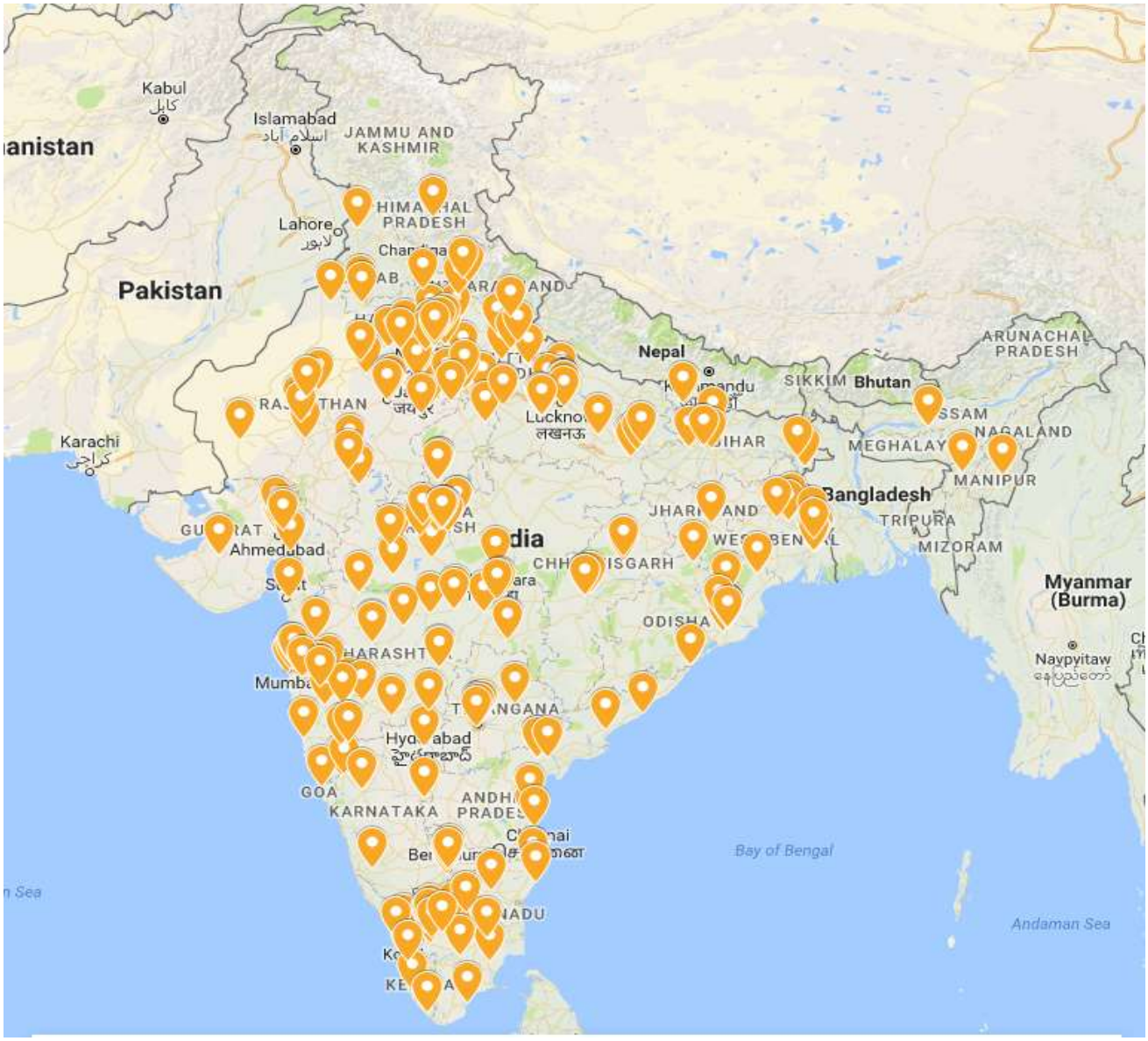
SCGJ is supporting 3 Centers of Excellence in Renewable Energy for the Western and Eastern Regions:

- GERMI – Gujarat Energy Research and Management Institute (East)
- Seacom Skills University, Kolkata
- Trident College of Engineering, Orrisa

3.2 Assessments & Assurance

3.2.3 Training Partners of SCGJ

Skill Council has Pan India presence with its network of Training Partners and their Training Center: Total Number of affiliated Training center of SCGJ is 529 as on 31th April, 2019.



Training Centers of Skill Council for Green Jobs

3.2 Assessments & Assurance Group

3.2.4 Assessment Agencies of SCGJ

Financial Year wise Training Status as on 31.05.2019																
		2016-2017			2017-2018			2018-2019			2019-2020			Cumulative		
S.No.	Name of the Scheme	Trained	Assessed	Certified	Trained	Assessed	Certified	Trained	Assessed	Certified	Trained	Assessed	Certified	Total Trained	Total Assessed	Total Certified
1	PMKVY Short Term	0	0	0	11705	10951	10173	12434	11180	10292	4677	4226	3984	28816	26357	24449
2	PMKVY 1	383	366	161							0	0	0	383	366	161
3	PMKVY RPL 1,2&3	0	0	0	899	664	638	1254	840	839	4344	4339	4339	6497	5843	5816
4	PMKVY RPL 4	0	0	0	0	0	0	14222	10040	10031	67027	64525	63402	81249	74565	73433
5	PMKVY Special Project	0	0	0	0	0	0	523	371	357	325	312	302	848	683	659
6	PMKVY CSSM - Centrally Sponsored State Managed Component	0	0	0	0	0	0	792	542	489	1046	1029	942	1838	1571	1431
7	Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY)	0	0	0	0	0	0	1097	930	794	95	87	84	1192	1017	878
8	Utkarsh Bangla- PMKVY PBSD (Pashchim Banga Society for Skill Development)	0	0	0	0	0	0	0	0	0	218	196	185	218	196	185
9	AICTE- PMKVY Techical Colleges	0	0	0	0	0	0	1154	1154	1154	807	171	171	1961	1325	1325
10	Deendayal Antyodaya Yojana- National Urban Livelihoods Mission (DAY- NULM)	0	0	0	0	0	0	330	308	303	0	0	0	330	308	303
11	NSKFDC- National Safai Karamchari Finance & Development Corporation	0	0	0	1238	1204	1204	8490	7882	7882	2620	2516	2516	12348	11602	11602
12	NBCFDC- National Backward classes finance & Development Coporation	194	177	175	411	374	359	138	133	133	0	0	0	743	684	667
13	Andhra Pradesh Skill Mission	0	0	0	300	298	298	650	645	643	0	0	0	950	943	941
14	Uttrakhand Skill Mission	0	0	0	30	25	23	0	0	0	0	0	0	30	25	23
15	Gujarat Skill Development Mission	0	0	0	128	99	85	415	260	257	0	0	0	543	359	342
16	RSLDC - Rajasthan Skill & Livelihoods Development Corporation	0	0	0	0	0	0	386	349	310	349	340	329	735	689	639
17	Bihar Skill Mission	0	0	0	0	0	0	28	24	24	0	0	0	28	24	24
18	PMKVY 2.0 BSDM (Bihar Skill Development Mission)	0	0	0	0	0	0	25	25	25	0	0	0	25	25	25
19	Odhisha Skill Development Mission	0	0	0	0	0	0	493	460	419	0	0	0	493	460	419
20	Asaam Skill Development Mission- PMKVY ASDM	0	0	0	0	0	0	57	47	47	0	0	0	57	47	47
21	Market Mode Paid Programs	80	80	61	1658	1596	1560	4985	4541	4460	888	804	705	7611	7021	6786
22	MNRE Sponsored Suryamitra	2998	2789	2553	9783	9328	8908	11515	11112	10800	4802	4665	4470	29098	27894	26731
23	CB_Scheme- North-East Candidates	0	0	0	120	117	114	126	116	110	0	0	0	246	233	224
24	CSR Projects	0	0	0	0	0	0	518	473	465	0	0	0	518	473	465
25	Jharkhand State Skill Mission										88	86	86	88	86	86
	Total:	3655	3412	2950	26272	24656	23362	59632	51432	49834	87286	83296	81515	176845	162796	157661

3.3 Marketing & Partnership

3.3.1 The Marketing and Partnership Group has the following major responsibilities:

•

3.3.2 Major Achievements during 2018-19

- Improving industry linkages in all the sub-sectors
- Finding opportunities to Partner with organisations & institutes
- Improving visibility of Skill Council for Green Jobs
- Organization of AGM and Governing Council Meetings
- All matters relating to Membership of SCGJ, including growth
- MoUs with Industry and other Skill Development bodies
- Participation in Conferences and Exhibitions
- Organizing sector specific events
- RPL Type 4 "BiCE" Certification Program under PMKVY.

3.3 Marketing & Partnership

Major Achievements during FY 2018-19

- In the first phase of RPL Type 4 "BiCE" program SCGJ scored number 1 rank first out of 35 SSCs by completing the certification for all the 72,514 numbers allotted to us in Phase I.
- Information collected about all MSME's in the country and for all Green business sectors. Industry Database developed for all sub-sectors
- Participation in over 43 skill development related events & exhibitions including Skill Competitions and Kaushal Melas
- SCGJ website is being made more dynamic
- Organized 1 Governing Council meeting in the given period.
- Interacted with industry and made 6+12=18 industries as Members / SCGJ Associates.
- SCGJ has signed in total MoUs with 44 institutions / industry organizations

Activities during FY 2018-19

The Marketing and Partnership Group of SCGJ has been focusing on strengthening industry connect, developing database for sector specific industry and demand aggregation. The group has been active in organizing focused group meetings and participating in various skill development activities. Interaction with other Skill Councils and exploring possibilities of collaboration with SCGJ was one of the new initiatives taken by the group. The Skill Council has been contributing articles in various magazines to showcase its area of operation and activities.

A new set of publicity and material for out reach have been developed and printed

(a) Membership of SCGJ

One of the most important activities undertaken by the Marketing and Partnership Group during this period was to broaden the industry base of SCGJ and develop industry associates. Over 600 industry, mainly MSME were contacted and informed about the activities of SCGJ. The group was able to convince 18 new industries to become Associates of SCGJ.

3.3 Marketing & Partnership

Industry Connect of SCGJ

	Total
Governing Council	12
Advisory Board	5
Member	25
Industry Associate	117
Validating Members	168
Total	327

(b) Other Marketing and Business Development Activities

- The publicity and branding material developed by SCGJ includes:
- **History was created when young S Aswatha Narayana, a student of CV Raman College of Engineering, who represented India in Water Technology Skill at the World Skills Competition 2019 in Kazan, Russia by bagging the Gold medal for our country.**
- Logo of SCGJ has more visibility now.
- Preparation & printing of Publicity material – Brochures, Standees and Banners
- SCGJ website is being made more vibrant, interactive & dynamic
- An Audio Video film on Safai Karamchari was developed
- Newsletters published are 7 in number.
- Fiji is interested to sign an MOU with SCGJ in partnership with regional universities in Fiji to train the villages. We have made our presentation. They are working to make it possible.
- A presentation was also made to all the Hon Consuls and High Commissioners for the Pacific Island Nations including Australia and New Zealand.

3.3 Marketing & Partnership

3.3.3 MoUs signed with Industry / Institutional Engagement so far

Signing of MoUs with industry and skill agencies was also undertaken. SCGJ has so far signed MoUs / LoAs with 44 industry / organizations with a view to cooperate in its activities and also help in achieving placement of SCGJ certified candidates

3.3 Marketing & Partnership

3.3.2 Industry Members

3.3 Marketing & Partnership

3.3 Marketing & Partnership

SCGJ's MOUs & Letter of Intent / Agreement (LOI / LOA)		
Sr. No	**Date**	**Signed with**
1	12/11/15	National Skill Development Corporation (NSDC)
2	04/08/16	Ernst & Young LLP.
3	28/04/2016	Centre for Technology Alternatives in Rural Areas (CTARA), IIT Mumbai (Clean Cook-stove)
4	13/05/2016	Vestas Wind Technology India Pvt. Ltd.
5	20/05/2016	Andhra Pradesh State Skill Development Corporation (APSSDC)
6	06/02/16	Energy Next
7	06/03/16	National Solid Waste Management Association of India (NSWAI)
8	20/06/2016	KPMG
9	27/06/2016	Municipal Corporation Ghaziabad
10	07/08/16	Unifyers Social Ventures Pvt. Ltd.
11	19/07/2016	National Backward Classes Finance & Development Corporation (NBCFDC)
12	26/07/2016	Commonwealth Education Media Centre for Asia (CEMCA)
13	19/08/2016	SME OneSource
14	11/03/16	Uttarakhand Skill Development Society
15	11/10/16	Indian Renewable Energy Development Agency Ltd. (IREDA)
16	21/11/2016	Sri Sri Rural Development Program Trust
17	24/11/2016	Gujrat Energy Research & Management Institute (GERMI)
18	25/11/2016	Industrial Waste Management Association (IWMA)
19	29/11/2016	Centre for Technology Alternatives in Rural Areas (CTARA), IIT Mumbai (Ferro cement)
20	30/12/2016	Anthropower Training Pvt. Ltd.
21	02/03/17	Maharashtra State Skill Development Society
22	03/01/17	Centre for Entrepreneurship Development (A Govt. of Gujarat Organization)
23	03/10/17	Gujarat Skill Development Mission
24	04/07/17	Rachna Sagar Pvt. Ltd. & NSDC
25	06/01/17	G.D. Birla Medical Research & Education Foundation
26	06/06/17	GIZ - German Cooperation
27	19/06/2017	National Safai Karamcharis Finance & Development Corporation (NSKFDC)
28	28/6/2017	Assam Skill Development Mission (ASDM)
29	28/6/2017	Tamil Nadu Skill Development Corporation
30	29/6/2017	Rajasthan Skill and Livelihoods Development Corporation

3.3 Marketing & Partnership

SCGJ's MOUs & Letter of Intent / Agreement (LOI / LOA)		
Sr. No	**Date**	**Signed with**
31	17/07/2017	Taylor & Francis (Informa UK ltd.)
32	27/7/2017	J S Renewable Pvt. Ltd.
33	17-Jul	Madhya Pradesh State Skill Development Mission (MPSSDM)
34	30/8/2017	Focal Skill Development Pvt. Ltd.
35	14/09/2017	REC Foundation (Initiative of Rural Electrification Corporation Ltd.)
36	23/9/2017	Uttarakhand Skill Development Society – EXTENSION
37	10/04/17	National Resources Defence Council (NRDC) & Council on Energy, Environment & Water (CEEW)
38	10/05/17	Jharkhand Skill Development Mission Society (JSDMS)
39	11/06/17	United Nations Development Program (UNDP) India
40	17/11/2017	National Scheduled Caste Finance & Development Corporation (NSCFDC)
41	21/12/2017	Mindtree Ltd.
42	01/12/18	SE HR & Placement Services Pvt. Ltd.
43	10/04/18	Kanoda Energy Systems Pvt. Ltd
44	18/12/2018	LabourNet India Pvt. Ltd.

Event organized:

The Skill Council for Green Jobs (SCGJ), organized "Sigma Summit 2019" an Event of Conferences, Solar Skill Challenges and Exhibition on "Solar Applications and Innovations" from 28th – 30th January,2019 at Jawahar Lal Nehru National Stadium, New Delhi. While the Conference is coordinated by Skill Council for Green Jobs, the exhibition is coordinated by Enxpo Infomedia.

In the light of India's commitment of achieving 100 GW solar power capacity by 2022 and penetration in Urban, Semi-Urban and Rural areas through 40 GW Solar Rooftop systems, the "Sigma Summit 2019", focused on various Solar Applications and innovations being done to use Solar Energy across the country. The Summit had 3 day conference on most relevant topics of Energy access, Sustainable Development and Innovative solar applications. The conference was attended by over 1000 participants including senior Government officers, Solar Energy Industry, skill training institutions and young solar entrepreneurs /skilled workforce. The Summit witnessed participation from over 60 companies promoting various applications of solar energy.

The summit had vertical of showcasing skill strength of India in the solar domain. Over 25 leading Solar Training institutions including National Institute of Solar Energy participated in the event. The training Institutions show cased their strength of training and participate in solar skill competitions. A one day workshop on Entrepreneurship development leading to spot connect with solar Industry and Venture Capitalists was organized. SCGJ will be hand hold the 20 selected entrepreneurs for next one year.

www.scgj.in

3.3 Marketing & Partnership

The Inauguration of the Summit was a Joint Session with **18th ISA SUN Meet, a monthly meeting of ISA countries. Representatives from 33 ISA countries joined the inauguration** and saw the exhibition of small-scale Solar industry in India and the skill training being provided in solar domain by various training partners of Skill Council for Green Jobs.

Following events were organized as part of the summit:

- Three Day Conference
- Industry exhibition
- Solar Skill Challenges
  - Solar Rooftop Installation Challenge
  - Solar Pump Installation Challenge
  - Solar Design Challenge
  - Solar Lights Maintenance Challenge
  - Entrepreneurship Development Activity
  - Awards to Institutions
  - Awards to Industry

Special Program:

RPL Type 4 "BiCE" Phase I & II

Skill Council for Green Jobs was sanctioned for RPL Type 4 “BiCE” Program under PMKVY, a total target of 72,514 in Phase I and 1,62,231 in Phase II. Phase I target has been successfully achieved within the given time. The qualification packs under RPL Type 4 “BiCE” are:

Qualification Packs
Solar PV Installer (Suryamitra)
olar PV Installer – Electrical
Solar PVS Installer – Civil
Safai Karmachari- Wet Cleaning and Mechanized Cleaning

Sanctioned Numbers for RPL Type 4 "BiCE" Phase I & II

SN	Category	Phase I	Phase II (Current)			Phase I & II Total
		Off-line (Completed)	Off-line	On-line	Phase II Total	
1	Total number of candidates approved	72,514	1,17,231	45,000	1,62,231	2,34,745
2	Total Project Cost (INR)	7,80,75,823	12,62,22,617	6,19,51,500	18,81,74,117	26,62,49,940

3.3 Associates and Institutions

Repair Guru / Focal Skill Development Pvt. Ltd.

Focal Skill Development Pvt. Ltd empowers youngsters and entrepreneurs to develop technical skills across varied domains. Repair Guru is an emerging solution provider and entrepreneur development initiative by them.

Their endeavor is to reach out to the youth in rural and semi urban areas and empower them with livelihood opportunities using skill development.

www.focalskill.com
info@focalskill.com

Solar, E-Waste management, Wind, Bio – mass, Biofuels etc.

Mohali

Mohali, Punjab

SCF 284, SwastikVihar, Patiala Road, Zirakpur, Mohali, Punjab - 140603
+91-80541 93050

Foresight Edutech Pvt. Ltd.

F-TEC Skill Development (Foresight Edutech Pvt Ltd), an NSDC Training Partner, is a Social Enterprise transforming the skills development, vocational training and corporate training landscape. They have a pan India presence with 100+ training centers operated by F-TEC Skill Development with trained manpower and has trained 4 Lacs+ youth in the country.

www.f-tec.net.in
mailus@f-tec.net.in

Skill Development

India

Delhi - India

404, Avalon Apartments,Manglapuri, MG Road (Opp Metro Pillar 46), New Delhi – 110030.
+91-11-40517335, 41094328

Partnership to Advance Clean Energy – Deployment (PACE-D)

Itis the flagship program on clean energy between the U.S. and India to jointly work on a range of issues related to energy security, clean energy and climate change. PACE seeks to accelerate inclusive, low-carbon growth by supporting research and deployment of clean energy technologies and policies. PACE combines the efforts of several government and non-government stakeholders on both the U.S. and Indian sides and includes three key components: Research (PACE-R), Deployment (PACE-D), and Off-Grid Energy Access (PEACE).

www.usaid.gov/india
indiaprogramsupport@usaid.gov

Green Energy

India

Delhi

Mark A. White, Mission Director, USAID/India, American Embassy, Shantipath, Chanakyapuri, New Delhi
+91-11-24198000 +91 -11-24198612

3.3 Associates and Institutions

STENUM Asia - Sustainable Development Society

It was established in the year 2009. They are a not-for-profit organization, working with industries, services companies, housing societies, schools, and city or district administrations to help them improve their sustainability options. They help enterprises in the adoption of appropriate and sustainable technologies, such as energy saving devices and renewable energy options.

www.stenum-asia.org

info@stenum-asia.org, rajat.batra@stenum-asia.org

Renewable energy, Energy Efficiency

Haryana

Gurgaon, Haryana

SFF 101, Palam Triangle, PalamVihar,Gurgaon, Haryana - 122 017

+91 – 124 - 4037518,9811051918

Internal Society of Chartered Engineers for Renewable Energy (ISCERE)

This body works towards innovation, updating and up gradation of technology for betterment in service and manufacturing industry.

www.iscere.in

info@iscere.in ; ipagrahari@gmail.com

Bio-gas, Energy Audit

India

Lucknow, Uttar Pradesh

13/503, Indira Nagar, Near Munshi Puliya, Lucknow, Uttar Pradesh - 226016

+91 – 9999327669

Ladakh Renewable Energy Development Agency (LREDA)

It was first known as the Non-Conventional Energy Cell, established as an act of the Ladakh Autonomous Hill Development Council in 1995. They identify and develop project proposals, design and implement demonstration projects in Ladakh, using wind energy, hydro power and other renewable energy sources.

www.ladakhenergy.org

lredaleh@gmail.com

Renewable, Solar PV, Hydro

Ladakh

Leh, Ladakh

+91 - 19 - 82255733

3.3 Associates and Institutions

Indian Wind Energy Association (InWEA)

Indian Wind Energy Association (InWEA) was set up in 2002 as a not-for-profit organization under the Societies Act. The Mission is to utilize the wind energy resources in the country in an optimal manner and thereby contribute to the country's quest for affordable, clean energy as well as energy security. To promote and spread awareness about the benefits of wind energy and the crucial role it can play in ensuring a sustainable path for the country's economic and social development.

www.inwea.org | manish@inwea.org, inwea01@gmail.com

Wind

Delhi

New Delhi

2nd Floor, All India Federation of the Deaf (AIFD), Building, 12-13, Special Institutional Area, Shaheed Jeet Singh Marg, New Delhi-110 067

+91-11-46523042

Indian Wind Turbine Manufacturers Association

The association was founded by a group of members from the wind industry. IWTMA plays a role in policy making for the Wind Energy Industry both at Central Government (Ministry of New and Renewable Energy) and State Government with all other allied ministries and departments such as Ministry of Power, Ministry of Finance, Ministry of Environment & Forests, Central Electricity Regulatory Commission, Central Electricity Authority, National Load Dispatch Center etc.

www.indianwindpower.com | secretarygeneral@indianwindpower.com, ad.delhi@indianwindpower.com

Wind

Delhi, Tamilnadu

Chennai, Tamil Nadu

KRM Plaza, North Tower, 8th Floor, No. 2, Harington Road, Chetpet, Chennai, Tamil Nadu - 600031

+91 - 44-43016188, 43015773

Cogeneration Association of India

COGEN INDIA provides a platform for bringing together all concerned, in any manner, including co-generators, power utilities, users of electricity, State / Central Government Ministries, departments and other bodies, suppliers of equipment and services, academic and research Institutions.

www.cogenindia.org | cogenindia.pune@gmail.com

Bagasse Cogeneration, Sugar, Textile, Cement, Rubber, Paper

Maharashtra

Pune, Maharashtra

MSFCSF Ltd. (SakharSangh),SakharSankul, First Floor,Agricultural College Campus, Shivajinagar,Pune, Maharashtra - 411 005

+91 - 20 - 25511404 / 25511446

3.3 Associates and Institutions

Bihar Social Entrepreneurship Association (BSEA)

Bihar Social Entrepreneur Association (BSEA) was founded in 2011 by a combine effort of few organizations and enterprises. BSEA is an inside out entrepreneurship journey that recognizes and nurtures young and aspiring entrepreneurs to achieve their potential through outstanding opportunities of learning, inspiration, change-driven leadership, social impact and innovation in Bihar.

www.bseaindia.com

utpaldutttry@gmail.com; amitmgr@gmail.com

Skill Development

Bihar

Patna, Bihar

BSEA, 1st Floor, House no 255, Patliputra Colony, Patna

+91 9386898565, 9798000099

Biogas Forum India

It was formed in 2006 and formally registered on 23rd February, 2010 as a National Technical Society. Biogas Forum aims towards developing a conducive environment which can facilitate biogas programs implementation in an efficient and sustainable manner in the country with the participation of scientist, policy makers, implementing agency, entrepreneur, field workers, beneficiaries, Government agencies etc.

www.biogasforumindia.in

bigfin.india@gmail.com

Promotion of Biogas & Bio-fertilizerTechnology

India

New Delhi

Centre for Rural Development and Technology, Indian Institute of Technology Delhi,HauzKhas, New Delhi 110016

+91-11-26596351 +91-11-26596351, 26591121

Gurgaon First

It was created in 2012 by progressive citizens of Gurgaon. Its stakeholders are the residents, the associations, the RWAs, the corporates and NGOs. Through its strategic conferences and business workshops. This civil society movement aims to showcase progress, highlight issues and suggest solutions in an effort to improve both living and working experience in the city of Gurgaon.

www.gurgaonfirst.org

teamgurgaonfirst@gmail.com

Improving city's Infrastructure, Sustainable and Smart Solutions

Haryana

Gurgaon, Haryana

D4/29, DLF Phase 1, Gurugram, Haryana - 122002

+91 - 124-4259827

3.3 Associates and Institutions

TRY

TRY was established in 22 April 2004 as a centre of excellence supported by the community and the Ministry of Environment and forest, Government of India .A National and state wise mandate of TRY is to promote environmental awareness nationwide. TRY is affiliated to the different and inherits the rich multi- disciplinary resource base and varied experience of for Development. TRY develops programmes and educational material, and builds capacity in the field of education and communication for sustainable development.

www.tryindia.in

info@tryindia.in

Education & Training

Bihar, Chattisgarh

Patna, Bihar

255-A Patliputra Colony , Patna ,Bihar 800013

+91 - 612-2270685

BPO Convergence

Started off in year 2005, BPO Convergence is a provider of VALUE in Business/Knowledge Process Outsourcing Services with emphasis on cost-effective & quality solutions, Having primary focus on delivering outsourcing benefits to its customers

www.bpoconvergence.com

info@bpoconvergence.com

Business Process Outsourcing

India

Bhubaneshwar, Orissa

VM EduLife Pvt. Ltd

It was established in the year 2013.They are associated with many educational organizations and provide online services. Their main target is to implement online services which will be helping students, faculty and every one to streamline the current services by using novel online facilities. This will ultimately reduce use of papers which are routinely used for various documentation purpose.

www.vmedulife.com

nfo@vmedulife.com

Educational, Online Service Provider and Skill Development

Maharashtra

Pune, Maharashtra

C-2, 602, Ganga Oceana Meadows, Near Aditya Birla Hospital, Thergaon Link Road, Chinchwad, Pune, Maharashtra - 411033

+91 - 7350352872, 8390701133

3.3 Associates and Institutions

Action in Community & Training (ACT)

It is a small experiment where they intend to add value to the world with whatever they have today. It provides a platform to connect experts who can help people across the leap forward with their help.

www.act-ngo.org

act_ngo@yahoo.co.uk

Women, children & health development

India

Delhi

J 1 /72, DDA Flats, Kalkaji New Delhi - 110019

+91-93139 84414

Teri School of Advanced Studies

It was established in the year 1988 & was conceived to cater to the need of disseminating the vast reservoir of knowledge created by TERI, a not for profit, independent research institute recognized globally for its contribution to scientific and policy research. Since its inception, the University offers not just world-class education, but also an environment that enables its students to develop fresh perspectives on their subjects of study. This includes regular interactions with researchers, scientists and academicians.

www.teriuniversity.ac.in

registrar@teriuniversity.ac.in

Energy, Environment, and Sustainable Development

New Delhi

New Delhi

Plot No. 10, Institutional Area, Vasant Kunj, New Delhi, Delhi - 110070

+91- 11- 71800222 +91- 11- 26122874

Appropriate Rural Technology Institute (ARTI)

This Institute was started in the year 1996. The main activities of this NGO are to serve as an instrument of rural development through the application of scientific knowledge and technology. Thus the primary activity is to develop, standardize, commercialize and popularize novel appropriate rural technologies aimed at improving the quality of life and the standard of living of the rural inhabitants of India. Special emphasis is laid on making traditional rural enterprises more profitable and on generating new businesses and employment opportunities in the rural sector.

ARTI has developed more than 15 technologies in the field biomass energy and more than 15 technologies in the field of agriculture. All these technologies accepted by rural population. More than 200 entrepreneurs are engaged in the fabrication and marketing of ARTI technologies.

www.arti-india.org

arti_pune@vsnl.net; articontact@gmail.com

Bio-energy – Improved Cook stoves, Domestic and community size, Biogas Plants based on high calories feeding materials, briquetting from non-fodder, non-de- compostable waste biomass

Maharashtra

Pune, Maharashtra

4. Other activities of SCGJ

In the year 2018-19 the Team SCGJ has organized/ participated in a large number of events round the country. The highlights are as follows:

Green Job Fair in Renew X Hyderabad

14th April 2018

PBSSD Meeting in Kolkata

17th April 2018

SCGJ actively participating in skilling activities in West Bengal. SCGJ has a regional office and Center of Excellence in West Bengal

Paschim Bengal Society for Skill Development (PBSSD) Meeting , West Bengal. The meeting is chaired by Skill Development Minister Purnendu Basu of West Bengal. All of the sector Skill councils are attending the meeting regatding assessment and certification under utkarsh bangla project.

Gurugram Haryana

28th April, 2018

Review Meeting of Smartgram

Dr. Praveen Saxena and Dr, P.dhamija presrnted progress of the Rashtrapati Bhawan initiative to develop Smart Gram Model in five villages namely Daulha, Harchandpur, Alipur, Tajnagar and Rojka Meo selected by Govt. of Haryana now extended to 45 more villages of the same vicinity. SCGJ, has been given the mandate to study the energy and environment patterns of the villages and implement various concepts of green energy generation, energy conservation, waste management, and related skill development activity.

Orissa Skill Conclave 2018 6-7th May 20187

Mr. K.Krishan, Chairman SCGJ at Orissa Skill Conclave seen with Secretary, MSDE and Hon'ble Minister, Skill Development

17th May, 2018

Launch of 3 Solar Books developed as part of SCGJ- USAID cooperation

Skill Council of Green Jobs participating in US –India Energy Cooperation

New Delhi

23rd – 25th May 2018

SCGJ officials participating in One Mega Event in New Delhi covering Solar, Transport, Smart Cities, Water and Green Buildings

23rd April 2018

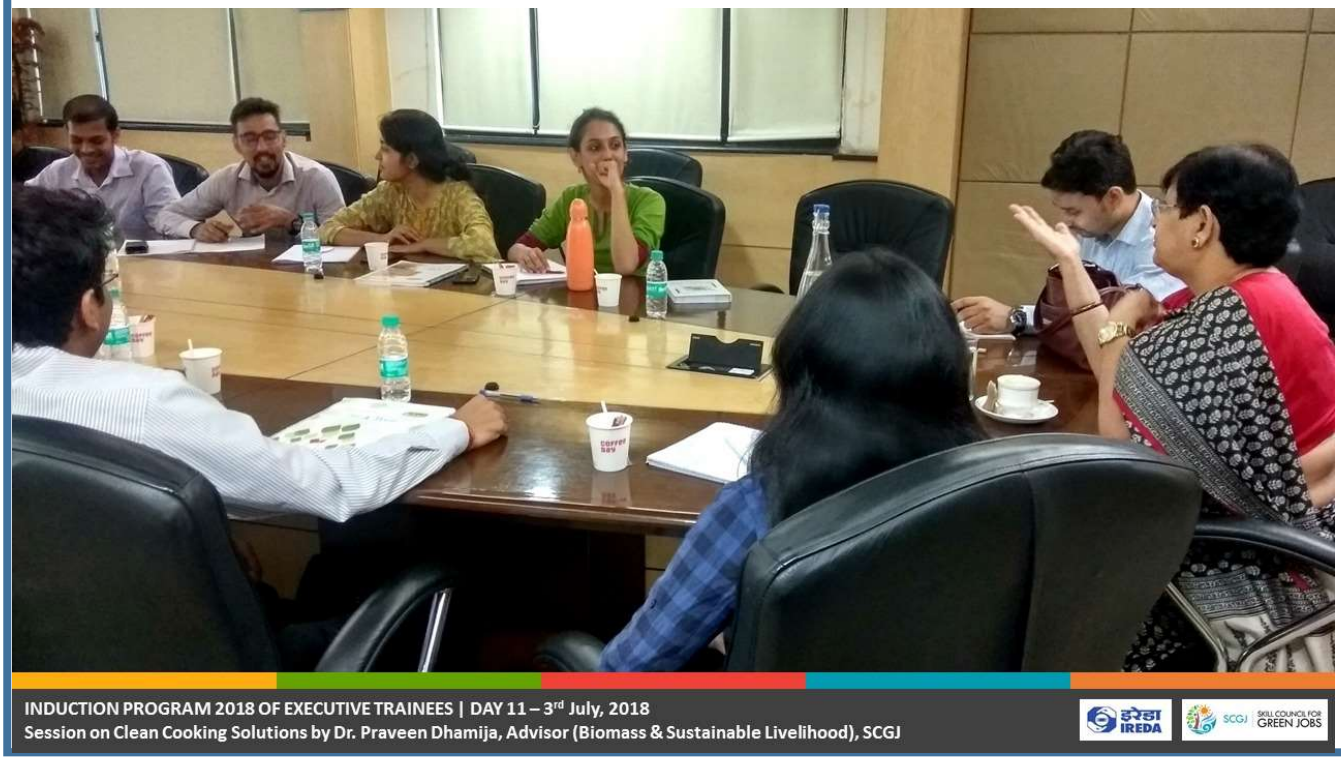
SCGJ strong participation in NE region

7th June, 2018

Training to SBI officers in World Bank funded project implemented by SCGJ

June / July 2018

Induction Program of IREDA officers July, 2018

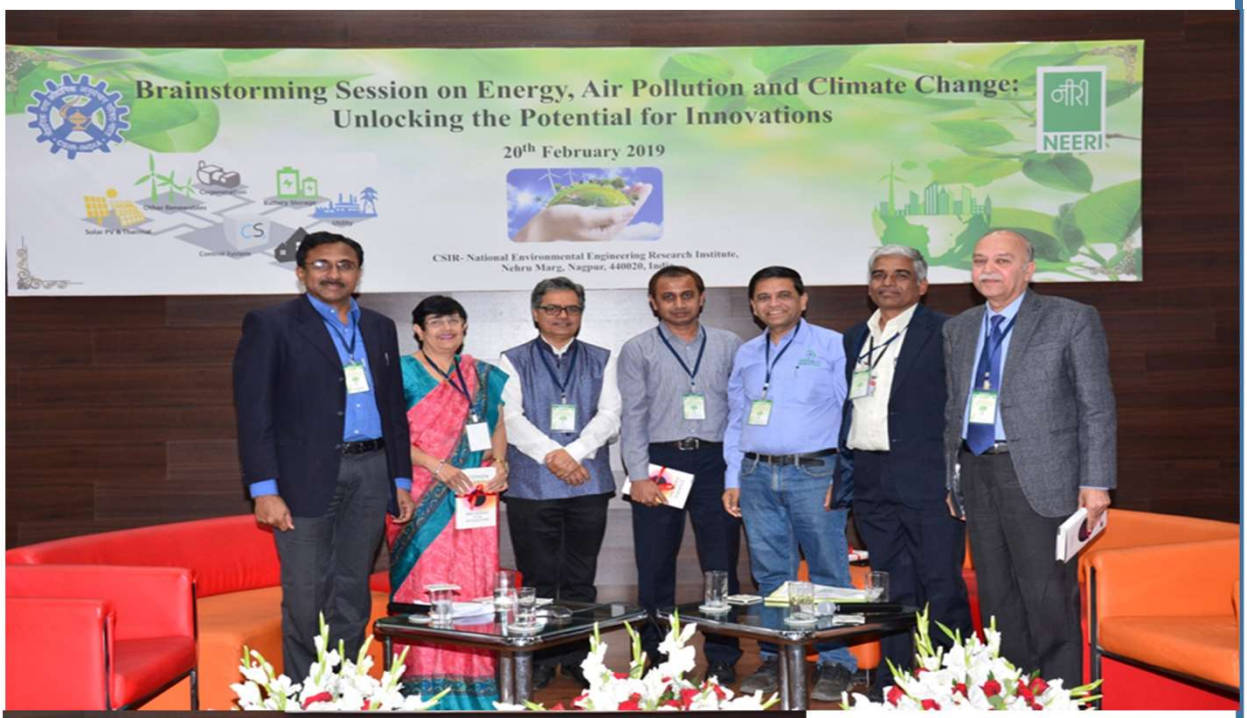


SCGJ at India Skills East Bhubaneswar 15th July, 2018
Hon'ble Minister discussing expanding role of Green Jobs in Skills

On World Biofuels Day, Prime minister released Biofuels Policy 2018 booklet. Addressing the gathering he said Biofuels can help reduce import dependency on crude oil. They can contribute to a cleaner environment, generate additional income for farmers & boost rural employment.

SCGJ is providing skilling support to the Bio fuel sector

Brainstorming session on Energy, Air Pollution and Climate Change: Unlocking the Potential for Innovations 20th February 2019 at NEERI Auditorium.



1-2nd March, 2019

Rural Cooking Energy Challenges

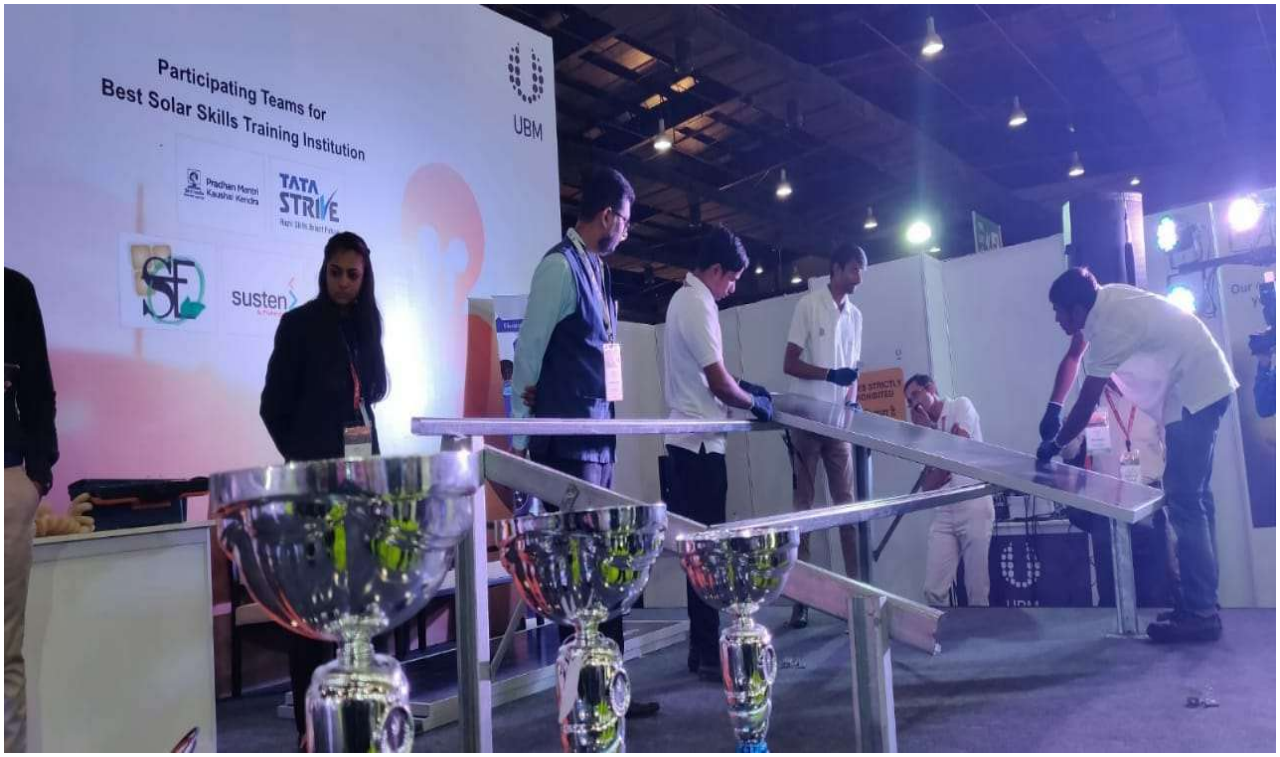
CLEAN STAKEHOLDERS' MEET | DEMONSTRATION OF PORTABLE EMISSIONS MONITORING SYSTEM (PEMS)

SCGJ represented by Advisor, SCGJ

Skill Council for Green Jobs in collaboration with NSKFDC kicked-off the 150th Birth anniversary commemoration of Mahatma Gandhi with the Launch of pan India *Workshops on Prevention of hazardous cleaning of Sewer and Septic tanks in the august presence of *Shri T. Gelhot, Union Minister for Social Justice and Empowerment*, Smt. Nilam Sawhney, Secretary MoSJE, Govt. of India, Shri K. Narayan,MD, NSKFDC, Mayor of East Delhi, Commissioner of EDMC.

SCGJ Stall at REINVEST 2018 at Greater NOIDA

Solar Skill Competition at Renewable Energy Expo



H. E. Mr Upendra Tripathy, Director General, International Solar Alliance addressing the gathering and opening the 18th ISA SUN Meet with Ambassadors and Country representives of ISA countries at Sigma summit.

Skill India | SCGJ | SKILL COUNCIL FOR GREEN JOBS | N·S·D·C National Skill Development Corporation

GREEN JOBS NEWS

April , 2019

Sustainable Energy, Circular Economy & Resource Efficiency

Marshalling my thoughts on Climate Action & Sustainable Development, brought to mind words of Erich Fromm, which I jotted down over 50 years ago, ***"We consume, as we produce, without any concrete relatedness to the objects with which we deal; We live in a world of things, and our only connection with them is that we know how to manipulate or to consume them".*** This renowned social psychologist & humanistic philosopher articulated, to little heed, the adverse impact of unbridled exploitation of resources & degradation of the environment as well as ecological balance, which is now begun manifest itself in our everyday lives. So much so that, today, Climate Change, Renewable Energy, Circular Economy, Resource Efficiency, SDG's have entered into the lexicon of, not only Governments, Businesses and Civil Society, but also citizenry. On one hand encouraging, but, in an era where social media dominates discourse, there is risk that concern gets limited to "Lip service" by Policy Makers and Citizen angst being dissipated with "WhatsApp forwards" .

As observed in IT and Telecommunication Industries, I venture to state that "Centralized Administration Systems" are not conducive for managing "Low Carbon, Sustainable, Inclusive Growth". Science will enable Policy Makers introduce regulatory controls on GHG emissions, Air & Water quality, Solid Waste disposal, etc. Technology innovation will lead to solutions as required for Climate Action & SDG' achievement. However, widespread adoption of these solutions is highly unlikely, only based on mandates, within developing economies, where affordability & consumer convenience are paramount needs of population facing multiple deprivation. Hence, Business innovation is equally important, to custom engineer solutions appropriate to local dynamics as well as rapid scale up to attain affordable costs.

Eighth GC

Eighth Meeting of the Governing Council of Skill Council for Green Jobs

The Eighth Meeting of the Governing Council of Skill Council for Green Jobs was held at 11.30 am 25th February, 2019 under the Chairmanship of Mr. K. Krishan, Chairman, CVC Bio-refineries Private Limited and Chairman, SCGJ at Board Room, Central Board of Irrigation and Power Building, Malcha Marg, Chanakyapuri, New Delhi 110 021.

Also, adoption of holistic, technology agnostic, approach, which optimally meets community needs. Sounds logical and actionable but, as Robert Burns wrote, "The best-laid plans of mice and men often go awry". So, notwithstanding NDC's and SDG's, tangible progress is seen in limited areas, eg Solar & Wind, EV's & Storage, which are large Industry driven. Sectors like Waste, Water, Green Buildings, Sustainable Plastics, which impact households directly, do not get the same 'mindshare' of Policy makers and have limited access to commercial capital.

As illustration, I touch upon Farm Waste in India. India has 141 million hectares net cropped land, which generates significant agriculture/ horticulture/ animal husbandry output and commensurate Farm Waste. It's forecasted that, by 2030, Agriculture residues, not having alternative productive use, will grow to 280 million (dry) tons, Cattle manure to 370 million (dry) tons & Poultry manure to 30 million (dry) tons. India is leading manufacturer of Biomass fired Boilers. Advanced Bio-Technologies enable processing Farm waste to a wide range Bio-fuels, which have potential to cost effectively, replace Fossil fuel alternatives. IEA had forecasted that 'modern' biomass could contribute 10% of the world's primary energy demand by 2035. India's National Policy on Biofuels was released in June 2018 and Ministry of Petroleum & Natural Gas forecasted potential of 15 million tons Bio-CNG. Hybrids of Solar & Bio Energy lead to achievement of many SDG's, as they impact jobs, health & many socio-economic parameters.

Hence, Farm waste management and processing to Bio-Energy for enhancing Clean Energy access, in conjunction with Solar Energy, is logical. Yet, there is more time spent in dialogue, than in program implementation! The primary issue is the perceived risks related to "bio-resources supply chain". What is inadequately appreciated is that with advancements in combustion, bio-chemical & thermo-chemical technologies, options for bio-wastes feedstocks has greatly increased. These Bio-wastes have a direct correlation to human consumption, which is logically expected to increase as more and more people come out of poverty and enter the middle class.

Bio-Waste, untreated, is as much an environmental hazard as particulate emissions from IC Engines, hence its management needs to be equally prioritized. Processing bio-waste to Bio-Fuels and Compost/ Bio-Char will enhance clean energy energy access as well as improve soil fertility. Hence, there is need for policies & fiscal instruments, which mitigate risks related to "Bio-Waste Supply Chain". This will require Bio-waste collection & aggregation to be managed as a Green Business, facilitated by mandates and enabling fiscal incentives, akin to the support being extended to EV's. The secondary issue is lack of "bankable" offtake agreements, such as standard 20 years PPA that is available to Solar Power Developers; this will, presumably, be addressed, once the Lenders are on board.

The Farm waste illustration is equally valid for Water conservation & Treatment, Green Buildings, Sustainable Plastics management, etc. Hence, I go back to the wisdom of Erich Fromm, who also wrote ***"I believe that freedom is not a constant attribute that 'we have' or 'we don't have; … there is only one reality: the act of liberating ourselves in the process of using choices"***. From long term perspective, Sustainable Energy, Circular Economy & Resource Efficiency will become the norm only when Producers & Consumers adopt them as matter of choice. Similar to how Automobile replaced Horse-cart, PC replaced Mainframe computer & Mobile phone replaced Land line. For this transformation, it's essential to have an ongoing process of sensitizing all Stakeholders & widespread Capacity building. In parallel, change will have to be catalyzed through mandates & appropriate regulatory framework, always in conjunction with policies and fiscal instruments that foster adoption of "Green Practices" by the community and incentivize growth of "Green Businesses.

KOLLURU KRISHAN
Chairman SCGJ

The Eighth Meeting of the Governing Council of SCGJ

A Report

The Eighth Meeting of the Governing Council of Skill Council for Green Jobs was held on 25th February, 2019 under the Chairmanship of Mr. K. Krishan, Chairman, CVC Bio-refineries Private Limited and Chairman, SCGJ at Board Room, Central Board of Irrigation and Power Building, Malcha Marg, Chanakyapuri, New Delhi 110 021.

Mr. K Krishan, Chairman, welcomed members of the Governing Council and Guests and briefly captured the activities of SCGJ during the year 2018-19. He suggested that SCGJ should strengthen its interaction with Ministry of Drinking Water and Sanitation (MDWS) in skilling support to the GOBARdhan scheme for galvanizing organic bio-resources especially animal waste for its gainful utilization so as to generate employment and additional income for farmers. He mentioned that that SCGJ has identified 17 entrepreneurs and would hand hold them for one year. He emphasized on the need to create Entrepreneurship groups.

Dr. P. Saxena, CEO, SCGJ informed the GC members about Annual Business Plan 2018-19 and its progress during Q1 – Q 3. He mentioned that SCGJ has fulfilled all infrastructural requirements and Governance methodology. The members were informed about the overall status against the Annual Business Plan 2018-19 targets.

The GC was informed that having initiated its core activities, SCGJ has expanded its activities to taking up consultancy projects in the area of Skilling for Green Jobs Sectors. A one month long Induction Program for Officers of Indian Renewable Energy Development Agency was organized by SCGJ. As part of extension of Smart gram initiative, SCGJ prepared sustainable development plan for 45 villages selected on peripheral fringes of the five villages in five clusters in a range of 5 KM

NSKFDC has sanctioned RPL trainings of 5000 safaikaramcharies and 3000 waste pickers. The implementation of this project started with the help of TPs of SCGJ from 2nd October, 2019. Further SCGJ is also conducting 200 workshops on "Prevention of Hazardous Cleaning of Sewers and Septic Tanks "as a special assignment from NSKFDC

SCGJ is the capacity building and skill development partner under The World Bank Grid connected Rooftop Solar PV Technical Assistance Program.

It was mentioned that Government is emphasis on Apprenticeship program and RPL 4. SCGJ should develop a systematic program to link its trainings with apprenticeship and enlarge its RPL activities.

It was suggested that the GC meetings may also be held outside Delhi, in the offices of GC members so that other members are informed about activities and skill requirements of that Industry.

Industry Associations regional and state offices may be utilized to improve industry connect of SCGJ. It was suggested that SCGJ should ensure delivery of quality training. The TOT programme should be more regress. CEO SCGJ mentioned that quality improvement programme of certified trainers of SCGJ are organised with the help of GIZ, DIFD. This helps in improving quality of our programmes.

The GC was informed that SCGJ has initiated Occupational Mapping, Skill Gap Analysis and Development of National Occupational Standards in Electric vehicles domain joining hands with DFID, UKAID and PwC. SCGJ has been actively involved in providing technical inputs for Skill Gap studies carried out by Natural Resources Defense Council (NRDC) and Council on Energy, Environment and Water (CEEW). SCGJ was closely working with NSDC and Urban Management Centre (UMC) for Occupational Mapping, Skill Gap Analysis and Development of National Occupational Standards in Faecal Sludge and Sewage Management (FSSM) sector and the study has been complete and based on the study there have been development of Qualification Packs.

The GC was informed that SCGJ has so far Trained and Certified 57,429 Candidates since inception. This include 9,176 Candidates under PMKVY 2.0, 12,079 Candidates under other Govt Schemes e.g., MNRE,NSKFDC,NULM , NBCFDC etc , 3609 Candidates under Paid Programs and 911 Candidates under State Govt Funded Programs

Annual Plan 2019-20 and proposed budget of SCGJ was presented.

Dr. P.Saxena, CEO,SCGJ and Secretary, GC

India's Approach towards Sustainability

-Renewable Energy, Skilling and Green jobs

India has adopted several ambitious measures for Sustainability, renewable energy, energy efficiency in various sectors of industries, achieving lower emission intensity in the automobile and transport sector, non-fossil based electricity generation and building sector based on energy conservation. Thrust on Renewable Energy, Promotion of Clean Energy, Enhancing Energy Efficiency, Developing Climate resilient Urban Centres and Sustainable Green transportation Network are some of the measures for achieving this goal.

It is recognised in the NDC that Renewable energy sources are a strategic national resource. Harnessing these sources will put India on the path to a cleaner environment, energy independence and, a stronger economy and towards sustainability. India's share of non-fossil fuel in the total installed capacity is projected to change from 30% in 2015 to about 40 % by 2030. The renewable power target of 175 GW by 2022 will result in abatement of 326.22 million tons of CO2 eq. /year. The ambitious solar expansion programme seeks to enhance the capacity to 100 GW by 2022, which is expected to be scaled up further thereafter.

India is one of the few countries where forest and tree cover has increased in recent years and the total forest and tree cover amounts to 24% per cent of the geographical area of the country. Over the past two decades progressive national forestry legislations and policies of India have transformed India's forests into a net sink of CO_2. With its focus on sustainable forest management, afforestation and regulating diversion of forest land for non-forest purpose, India plans to increase its carbon stock.

The Indian NDC brings a huge responsibility on the country and equally big opportunity for green business and poses skilled man power requirement. The year 2017 ended with a total Installed Capacity of 335.5 GW which includes 220 GW from Thermal, 0.446 GW from Hydro, 0.06 GW from Nuclear and 64 GW from various Renewable Energy Sources. The 64 GW Installed Capacity from renewable energy includes 33 GW from wind energy, 17 GW from solar energy and 12 GW from biomass, small hydro and waste to energy.

The success of any technology or technological shift is greatly dependent on its proper execution on ground through trained man power. It may not be possible to achieve the desired results of any strategic shift unless our human resource and skill development policies are aligned to address the needs. Skills development is seen as the shared responsibility of the key stakeholders viz. Government, the entire spectrum of corporate sector, community based organizations, those outstanding, highly qualified and dedicated individuals who have been working in the skilling and entrepreneurship space for many years, industry and trade organizations and other stakeholders.

To address the skilled manpower issue associated with sustainable development, the Ministry of Skill development and Entrepreneurship has set up a separate skill council, "Skill Council for Green Jobs", a Sector Skill Council set up for the purpose of developing competencies /skills in the domain of renewable energy, sustainable development, waste management and environmental issues.

A Green job is defined as the one that helps bring about and maintain a transition to environmentally sustainable forms of production and consumption. It cut across all the sectors, be it energy, materials, water conservation, waste management, pollution control etc

Skill council for Green Jobs is working towards introducing environmental friendly and sustainability in existing job roles as well. This translates into a huge opportunity for additional job creation and impetus for Skilling & Entrepreneurs Development. Currently, Green Business sector generates about 20 lakh Jobs, excluding "Waste Management" which is largely unorganized, with large deployment of human resource. It is estimated that about 2 crore additional jobs, apart from "Waste Management" will be created by 2030 due to strategic shift of India towards sustainable development and climate justice.

SCGJ is building on its industry connect with a government-industry interface and partnership with stakeholders from industry, labour as well as the academia. Its activities are linked to Skill India Mission, National Solar Mission, Swachh Bharat Mission and Make in India initiative of Government of India. SCGJ is closely interacting with Ministry of New and Renewable Energy, Ministry of Environment, Forest & Climate Change, Ministry of Urban Development, Ministry of Water Resources and Niti Aayog to cater to the skilled manpower requirements for the changing scenario.

Skill council for Green Jobs is working towards introducing environmental friendly and sustainability in existing job roles as well. This translates into a huge opportunity for additional job creation and impetus for Skilling & Entrepreneurs Development. Currently, Green Business sector generates about 20 lakh Jobs, excluding "Waste Management" which is largely unorganized, with large deployment of human resource. It is estimated that about 2 crore additional jobs, apart from "Waste Management" will be created by 2030 due to strategic shift of India towards sustainable development and climate justice.

Dr. P.Saxena, CEO,SCGJ

CONFERENCE ON "CURBING STUBBLE BURNING: MAKING SOLUTIONS WORK"
February 26, 2019
FICCI, Federation House, New Delhi

Stubble burning is a common practice followed by farmers to prepare the field for sowing, even though they are aware that the burning of straw is creating alarming atmospheric pollution levels in Northern India. The farmers are ill-equipped to deal with this problem due to various factors like affordability of the new technology solutions and the associated cost factor.

A conference was organised by FICCI to discuss issues associated with Management of Crop Residue to Curb Stubble Burning: Challenges and Solutions The challenges faced by farmers and solutions towards effective management of crop residue to curb stubble burning (e.g. by market creation for straw pellets, alternative cropping pattern etc.). were discussed

A dedicated session also discussed solution highlighting the following:

- Alternative Cropping pattern wherever possible
- Best technologies and SOPs for collection, storage, densification and aggregation of agricultural residues like stubble

FICCI is constituting a Working Group on Curbing Stubble Burning as a follow-up of the Conference. Chairman, SCGJ , Mr K.Krishan is leading the working group.

Management of Biomass Supply Chain -Creating jobs with agricultural waste

The New Biofuel policy announced by Government of India on 10th August 2018 focusses on many initiatives for enhanced use of biomass for improving availability of ethanol through multiple feedstocks, developing 2G ethanol technologies, increasing production of biodiesel for blending, focussing on Drop in fuels and advanced biofuel including Bio-CNG, Bio-methanol, etc. Another innovative initiative titled Sustainable Alternative Towards Affordable Transportation (SATAT) launched in New Delhi on 1st October, 2018 is also directed as setting up Compressed Bio-Gas (CBG) production plants using agricultural residue, cattle dung and municipal solid waste for use as automotive fuels. Recently NTPC has announced plans to move towards replacing 5% of coal with agro-residues pellets/terrified pellets through biomass co-firing recognized by UNFCC to mitigate carbon emission in coal fired power plants at 21 locations.

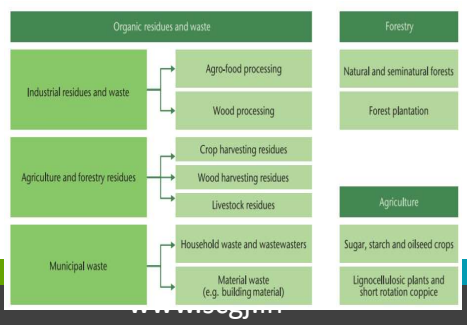
In order to achieve the above objectives, there is a need to ensure biomass resource availability and its demand through a proper supply chain management. The resource being bulky, voluminous and only seasonally available creates serious hurdles in the reliable supply of the feedstock, regardless of its application. Availability of skilled human resources is critical to achieve the goals.

The current capacity and skills are not adequate and there is a gap in terms of knowledge and application which are critical to conceptualize, implement, regulate and monitor.

Bioenergy production requires the flow of biomass material from its origin to its end use and passes through a series of processes called the biomass supply chain. A biomass supply chain needs to be managed properly for constant and reliable feedstock for the energy conversion process so as to reduce risks to the investments. Poor environmental planning can hurt the environment, damage the image of biomass energy, and limit available resources. Hence proper planning for the supply chain should begin before or at the same time that the energy conversion technology is being planned. Though almost all parts of the supply chain are interrelated, the processes of developing the chain need to be spread into several distinct steps as identifying locally occurring biomass resources, the roles of individuals and organizations in the supply chain and examination of the quality control and pre-processing needs for the feedstock. Storage concerns are another large part of a supply chain and should be well thought through. The final analysis of the supply chain should be an overall evaluation of the economics associated with collecting and delivering biomass feedstocks. All these steps are discussed in detail below:

a)Identification of types of biomass resource

Selecting a suitable biomass feedstock resource is the first part of the supply chain as it is necessary to first review the type of biomass required as feedstock and its properties which would make it suitable for conversion to energy or refining to bio-based products. Biomass could be sourced from various materials as below:



b) Quality assurance

After identification of the biomass, it is very necessary to assess the quality as most of the energy conversion technologies are designed to operate best with a consistent feedstock that remains within specified quality control parameters. Maintaining biomass quality begins when biomass is standing in the field or forest and continues until the biomass is used in the energy conversion process. Hence all staff involved in the biomass supply chain should understand quality control issues and take steps to reduce or report problems. The parameters which are very significant for 'quality control are primarily moisture, presence of dirt & sand and contamination of the feedstock.

c) Biomass Logistics

The logistics of variable biomass material for delivery to the bioenergy processing plant is a key part of the supply chain that is often overlooked by project developers. The biomass supply chain involves collection, storage and transportation of residue from field to site for end-use, collectively these activities are called as aggregation. Aggregation involves processing which involve several key steps such as baling, hauling, residue transportation and plant operation among others. India has skilled labor and substantial financial resources, which can be channelled into ramping up the collection of feedstock from crop residues; establishing collection infrastructure, and transporting and handling of large amounts of biomass. The bulky nature or low energy density of agricultural residues possesses problems in handling, storage, transportation and conversion processes. Since biomass transportation cost is a function of the quantity of available biomass in a region and the transportation distance, it is desirable to ensure availability of adequate biomass in the vicinity of facilities, industries etc. Biomass needs to be stored to ensure long term biomass availability for ...

…implementation of economically viable bio-based energy projects. Biomass can be stored in Biomass storage depot which need to be built and maintained for comprehensive inventories of biomass preferably in States which have high biomass availability per unit area which in turn is linked to the number of jobs in the region.

Keeping in view the most recent focus of the Government of India on the need to address the issue of stubble burning, it is necessary to create a cadre of skilled manpower and local entrepreneurs who not only manage the surplus agriculture residue of farm but also develop avenue for livelihood generation in villages. Skilling in this sector will not only organize agriculture residue but also improve the service quality, its efficiency, livelihood of the farmers/labors and to create job opportunities in the existing and as well as upcoming Bio-energy plants in the country. Skill Council for Green Jobs(SCGJ) has developed following Qualifications Packs to skill local youth in collection, aggregation and storage of farm waste and also be trained for developing business in supply chain management of agri residues. These job roles have been prepared as per the National Skill Qualification Framework (NSQF) for imparting skill training for these job roles:

- Agri-residue Aggregator
- Biomass Depot Operator
- Manager- Waste Management (Elective: Biomass Depot/Compost Yard/Dry Waste Center)

It is expected that local youth and semi-skilled technicians will be benefited from skilling and potential green jobs such as collection of waste, transportation to treatment plants, management of plant and operation of biomass depot. This will lead to additional source of income generation for farmers or local youth in collection and aggregation of farm waste, operation of biomass depot.

The villages will become self-reliant in clean energy by harnessing bio-waste to generate bio-energy and thereby reduce burning of wood and dependence on forests. Sanitation will be improved by reducing waste from the villages and overall cleanliness and leading to decrease in incidences of malaria and other sanitation related diseases through reducing waste stagnation in villages, saving on earnings and time.

Agricultural biomass is generally harvested once in a year at the end of the growing season. However, energy conversion facilities operate round the year, thereby making it necessary to store biomass for a consistent quality supply throughout the year. A proper storage plan needs to be developed to take care of regular feedstock supply, harvest timing, random supply shortages, delivery limitations, economic factors and safety. Another benefit of biomass storage is the availability of the biomass at a stable price for a future period when biomass cost can be more expensive. Large amounts of biomass if stored at a single central location may not be feasible for economic and logistical reasons. Multiple medium sized storage sites spread throughout the collection area can relieve space concerns and also good for limiting traffic, noise, and debris concerns for a single large facility. Finding suitable smaller sites can also be financially or logistically easier than a large central storage site near the facility.

Proper planning for biomass storage requires storage site selection and designing for daily operations. A good storage facility should be sited to facilitate good transportation infrastructure for receiving or using biomass. More space is also needed for trucks to load/unload, space for separating batches of biomass and inspection of the facility and safety reasons. A conservative estimate would be that at least 50% of the site would be non-storage space.

Daily operation issues may be addressed by storing densified biomass or bales which increases energy density and subsequently produce high energy conversion efficiency.

These bales can be stored in biomass depots. Densification can improve the physical property of the biomass to facilitate collection, transportation and storage. Second, densification technology can increase energy density , and subsequently produce high energy conversion efficiency. The series of steps starting from agri-surplus collection from fields up to storage as densified biomass is depicted in the figure below:

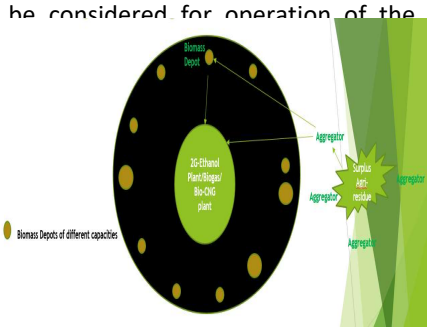
1	2	3	4	5	6
Collection from fields	Densification	Primary Storage	Transport	De-baling and densification	Storage in Depot

storage site is very important. Poor storage practices can lead to premature release of concentrated energy and cause fire. The danger of fire comes from three general areas: unintended ignition from sparks or hot surfaces, spontaneous combustion, and intentional vandalism. Preventative measures like use of spark arrestors on onsite equipment, regular inspection, cleaning & lubrication of equipment and proper insulation etc. need to be practiced. These basic preventative steps greatly reduce risk and are relatively inexpensive.

e) Operation of Biomass Supply Chain

The success of Biomass supply chain depends on the efficient performance of multiple roles and activities needed to support the operation of the supply chain. The major consideration is how various stakeholders will be involved to fulfill their obligations.

There can be participations by all the members of the community or there can be facilitators who act as Aggregators and organize all activities for the supply of biomass. Facility size and its resulting feedstock demands will also dictate who may be involved in biomass logistics. Two models can therefore be considered for operation of the



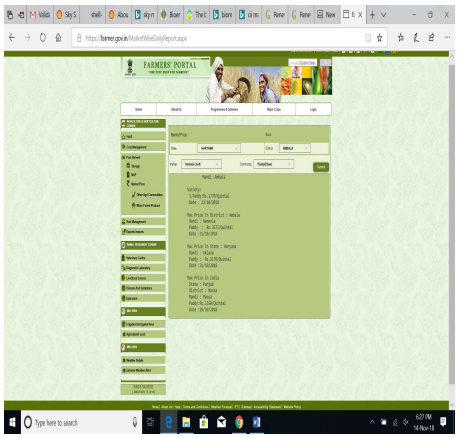
i. Farmer's Co-operatives:

Farmer's co-operatives is one of the most effective means of reducing the risk in agriculture and strengthening the livelihoods of small and marginal farmers. The process involves mobilising farmers into groups of between 15-20 members at the village level (called Farmer Interest Groups or FIGs) and building up their associations to an appropriate federating point i.e. Farmer Producer Organisations (FPOs). In the biomass supply chain, the Farmer's Co-operatives would act as Aggregators and ensure delivery to the Biomass conversion facility of quality biomass. They may create biomass depots at village level to manage biomass round the year for a regular supply and also share the capital costs for the conversion and processing equipment. Farmer's co-operatives may also avail the Custom Hiring Centres (CHCs) to facilitate use of equipment for agri-residue management.

ii. Entrepreneurs

In this model, the entrepreneur will act as an aggregator and would liaise with the producer/landowner for the biomass and handle all steps from harvesting until its use at the conversion facility. The landowner/producer does not participate in the biomass harvest and consequently has no capital or labor costs for biomass harvesting. The entire investment is to be made by the Entrepreneur for collection, aggregation, transportation and storage. In this model, the conversion facility can focus more on the core activities of the plant, but has to make provision of quality check of the feedstock supply.

In order to ensure proper operation and management of supply chain, it is important to educate all the stakeholders, so that knowledge, skill, and goodwill of all the parties involved in the supply chain can resolve issues quickly. The Krishi Vigyan Kendra (KVKs) set up by the Government, can be utilized to provide support activities like providing technology dissemination to farmers, training, awareness etc. to local youth and farmers for Agro-residue collection and storage. KVKs may act as biomass exchange at district level that plays crucial role in developing aggregation mechanism. The Farmer



https://farmer.gov.in/FarmerHome.aspx

portal developed by Government of India for improved post harvesting, agri residue pricing can be utilized for biomass availability in real time, field conditions, price, improved knowledge of feedstock and storage values and availability of transport etc. to facilitate improved planning and preparation.

Conclusion:

Biomass supply chain though a simple concept needs to be developed based on the conditions of the biomass conversions with focus on location, capacity and type of storages, pre-processing and bio-refineries, Sourcing biomass, allocation of biomass between facilities and transportation modes. The objective should be to develop successful supply chains that can handle large volumes of bulky biomass and transport it to the conversion facility at an economical cost. Proper project planning and operations are needed to make sure these elements are part of any new supply chain and will help contribute to a successful biomass to energy project

Dr. (Mrs.) Praveen Dhamija
Advisor, SCGJ
(Biomass & Sustainable Livelihood)

SOME OTHER ACTIVITIES OF SCGJ

Dr. Praveen Saxena (CEO, SCGJ), Speaking in the session on "Empowering with Energy Effeciency and Sustainable Skills" at WSDS 2019.

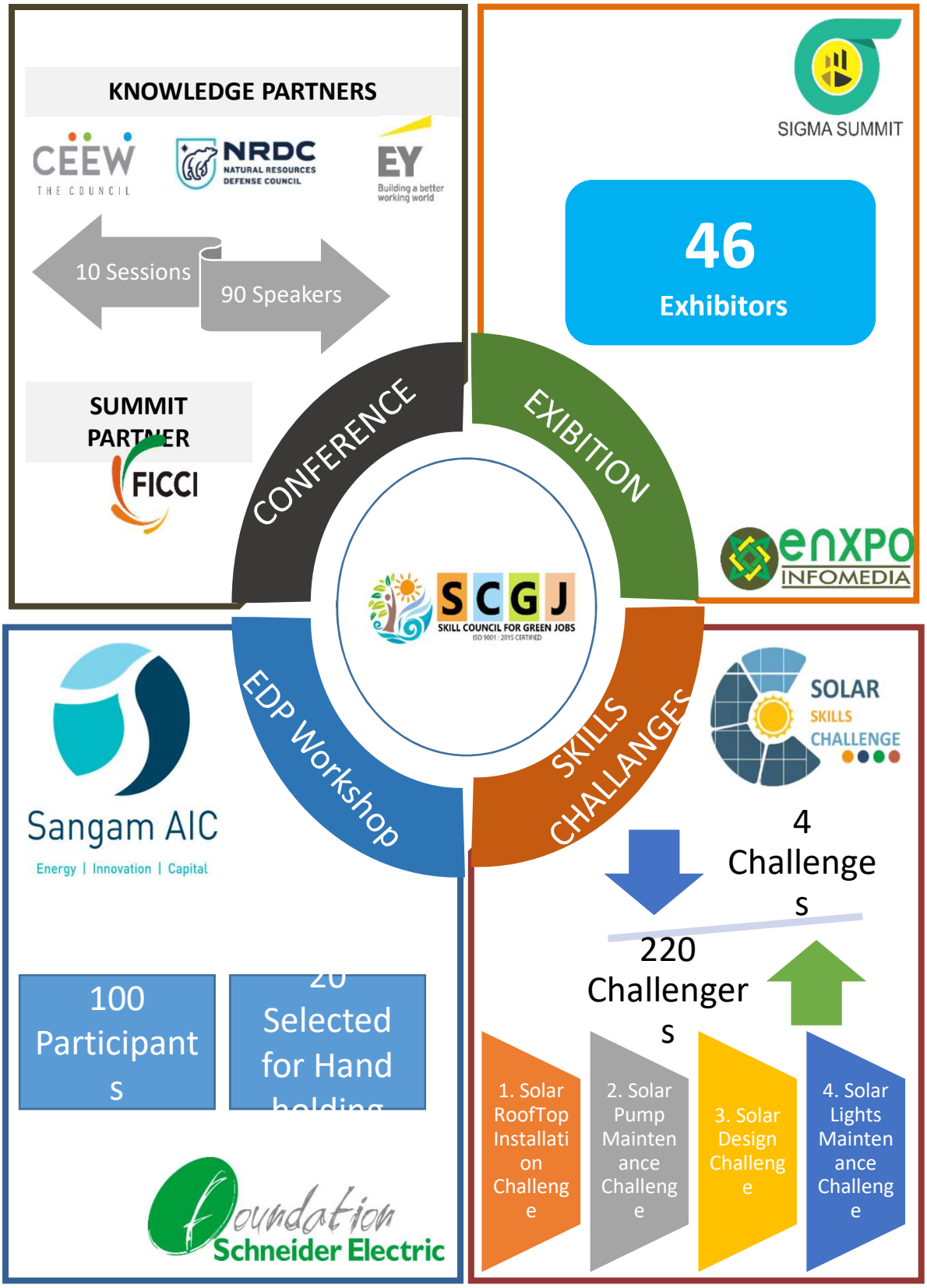
Dr. Parveen Dhamija , Advisor - SCGJ, Participated as a speaker in a Biotechnology Seminar on 14th feb 2019 organized by Bennett University.

Mr. Tanmay Bisnoi participated in Conference on 'Renewable Energy-Challenges and Way Forward' organised by PHD Chamber of Commerce, and spoke on "Rooftop Solar Landscape Study: Market potential, Skills, Entrepreneurship and Applications".

DFID in coordination with SCGJ and PWC organized a Training of Trainers (ToT) program on Solar PV Project Management.
A total of 26 participants learned international best practices from our training partner from UK

SIGMA SUMMIT AT A GLACE

SCGJ organized the Sigma Summit at JLN stadium on 28th and 29th Jan 2019



GLIMSES OF SIGMA SUMMIT




CONFERENCE HIGHLIGHTS

Skill Council for Green Jobs vision is " to capture the skilling needs for both service users and manufacturers/ service providers within the sector and implement a roadmap for a nation-wide, industry led collaborative skills development initiatives that will enable meet India's potential for "Green Businesses". SCGJ has skilled over 60,000 people and linked them to employment in India, the manpower is skilled under the National Skills Qualification Framework, the framework enables industry to recognize the skills sets easily.

Dr. Praveen Saxena, CEO SCGJ invited the International Solar Alliance (ISA) partner countries to share their learnings which would enable SCGJ to serve the country in a better manner. Using the same platform Dr. Chetan Singh Solanki and his team launched the Gandhi Global Solar Yatra at the inauguration session of Sigma Summit.

According to Mahatma Gandhi, the **"Not mass production but production by masses is required".** In the context of energy, lack of energy access and climate change, the need of the hour is the production of energy by masses.

It is clear that only science and technology development will not be sufficient for sustainable existence on Earth. It is high time that we pay gratitude and adopt Gandhian ideologies while celebrating 150th Birth Anniversary Year of Mahatma Gandhi. The **Gandhi Global Solar Yatra (GGSY)** is planned to promote self-sufficiency in energy for sustainability, mainly for those who lack access, as it is possible today to provide complete, cost-effective, reliable and sustainable solar energy access while protecting the environment, creating livelihood and empowering locals. With the vision to promote localized energy self-sufficiency by creating awareness and sensitizing towards the viability of 24x7 decentralized solar solutions, GGSY aims to sensitize the key governmental and non-governmental officials towards solar energy.

Challenge Supported By :

PATANJALI
Anant Urja Srot...

Winner:
Rahul, Shaym Babu, Shayam Lal (NPTI , Badarpur)

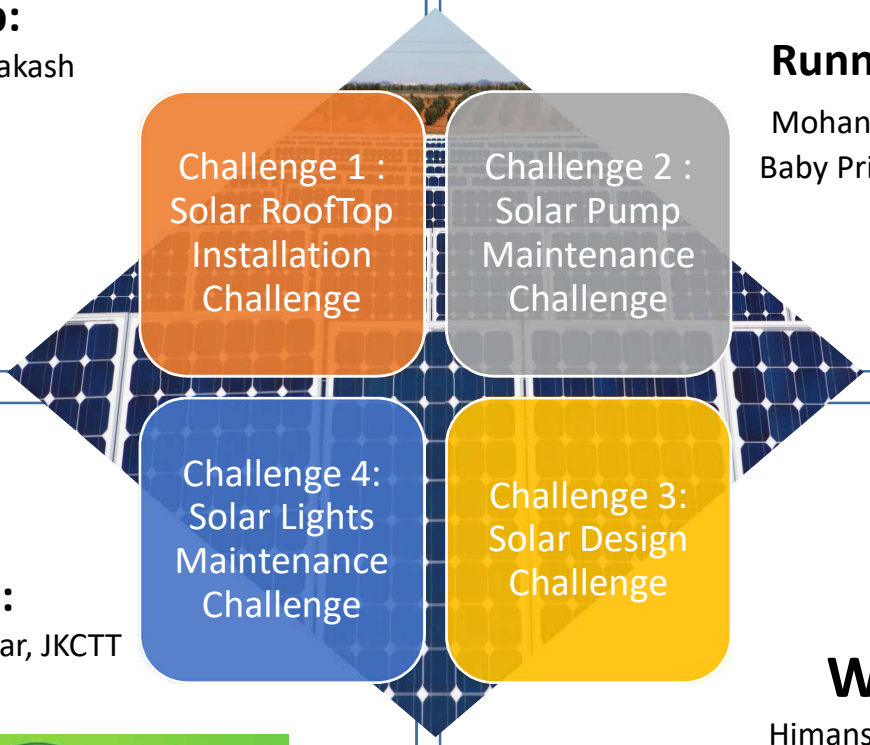
Runner Up:
Jasot, Vikki, Prakash (DISET, Delhi)

Challenge Supported B...

ROTOSOL

Winner:
Sunil, Abhishek & Titiksha (Team Energio)

Runner Up:
Mohan, uvaish & Baby Priya(Team Energio)



Winner:
Ankit Premi

Runner Up:
Subendhu Sarkar, JKCTT

The Green Store

Winner:
Himanshu Agarwal

Runner Up:
Ratnesh Shingrupe

Challenge Supported By :

SOLAR SKILLS CHALLENGE

SOLAR ENTREPRENURSHIP WORKSHOP CUM CHALLANGE

84 people registered for the Solar Entrepreneurship workshop cum Challenge. After Screening 35 enthusiastic, budding entrepreneurs were assessed for the final round of Pitching. 20 Participants having different business ideas, technology Driven pitched their business before the VC's (Venture Capitalists).

The Judges analyzed the business pitch based upon the following five parameters:

Relevance | innovation | potential | sustainability | pitch presentation

The f…of the country and have different business ideas on Developing New Technology or providing services.

Winner:
Vinit Pratap Pardeshi & Ganesh Chaudhary
Runner UP:
Richa Singh

Following are the top 20 Entrepreneurs selected for hand holding:
Amit Sharma, Shubham Rawat, Jayanth, Girisankar T J, Satish Kumar Ghosle, Aman Kumar Gupta, Manojkumar Patil, Ramkumar Patel, Ganesh Chaudhary, Amol Ram, krishna Ghule, Bharatesh Medar, Vipin Bansal, P Tirupati, Nandan Korgaonkar, Dilip Kumar Divakar , Richa Singh, Asim Khan, Md Rajib, Nikhil Kumar ,SHEWALI BORTHAKUR,

SIGMA SUMMIT

Post the competition SCGJ is regularly interacting with the entrepreneurs to develop their ideas, SCGJ conducted a Meeting on 19th March in its office at Chanakyapuri.

News From the Eastern Region

10th January, Ranchi: SCGJ took part at Global Skill Summit 2019, Momentum Jharkhand. The skill development programs in association with IIT Bombay were the special attention. More than 5000 Solar Lighting Technicians have been trained and certified in Jharkhand and Bihar. Hon'ble Chief Minister of Jharkhand inaugurated the Summit.

8th March, Patna: Training of trainers on waste management was conducted in Patna at AILLSG, from 6th March 2019. The training program was attended by 14 participants from West Bengal, Odisha, Jharkhand, Bihar, Madya Pradesh and Uttar Pradesh.

The training was for the job role of SGJ/Q6102: Safai Karamchari developed by SCGJ, they also learned about the process of carring out the 5 days RPL program of NSKFDC and Workshop on Hazardous cleaning of Sewer and Septic Tanks.

16th February, Kolkata: Trainers and Assessors are the integral part of the skill ecosystem, Skill Council for Green Jobs gives special importance in development of quality trainers across the India. In this font SCGJ in collaboration with GIZ , RENAC and Steinbeis Organized a 5 day Training of Surya Mitra Master Trainer Seminar under the TROPHI (Trainings on rooftop photovoltaic systems in India) project. The training program emphasized on teaching with Innovative methods so that participants can learn more. Under this project one training program is conducted in Bhubaneshwar Odisha and another in Kolkata, West Bengal from 12th – 16th February 2019.

The Editor of this edition

Sarvesh Pratap Mall joined SCGJ about 2 years back and is looking after clean cooking and bio mass related activity.

Sarvesh is M.Tech in Green Energy Technology from Pondicherry Central University with over 4 years of experience in project feasibility report preparation, liasoning and operation management in RE certification. Most part of his work is around policy advocacy in the Bio-energy and waste management sector. Currently he is working as Technical Associate in SCGJ and involved in R&D in Skill Development activities for six sectors viz Water Management, Solid Waste Management, E-Waste Management, Carbon Sinks, Green Construction and Clean Cooking along with the implementation of sustainability project of President adopted villages in Haryana.

Green Jobs News

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GREEN JOBS NEWS

July , 2019

Shri Deepak Gupta, Former Chairman UPSE and Secretary MNRE addressing the CEO panel discussion during the solar conference at smart cities expo in New Delhi on 22nd May, 2019

Incentivise green businesses based on economic cost of

For millenniums, ecological balance was maintained by the nature itself, which was disrupted by the advent of the industrial era. Thereafter, unrestrained growth in industrialization, vehicular transportation, exploitation of natural/ mineral resources and unplanned urbanization disturbed the harmonious relationships between the environment and human beings. This disruption was not immediately manifested, since, for most of the 20th Century, economic progress was limited to the "western economies", constituting a small share of population as well as geographical area. The impact of lasting damage like ozone layer, greenhouse gas emissions and deforestation came into public consciousness towards the end of the 20th Century and lead to UN protocols. However, this coincided with saturation in economic growth in the "developed economies", while large emerging economies were going through their growth phase. Hence, restraints on "developing economies" are perceived, to some extent, as a form of "neo colonialism".

Furthermore, even within the "emerging economies", there is lack of congruence as to what represents "sustainable development". For most governments, alleviation of poverty and socio-economic development takes priority and they tend to "slur over" environment damage, which is rationalized as "small sacrifice for larger good".

While there is merit in such school of thought, the costs of environment degradation are so high that an unambiguous approach is required to revive a

International

India Singapore cooperation – Meeting in New Delhi

A meeting between Ministry of Education, Government of Singapore and Ministry of Skill Development and Entrepreneurship was held in New Delhi on 6th June, 2019 todiscuss possible collaborationsin skill Domain. The Singapore delegation was led by Hon'ble Minister of Education Mr. Ong Ye Kung . Hon'ble Minister MSDE, Secretary and other senior officials of MSDE were present.

balanced relationship between human activity and the environment. This necessitates widespread community awareness of the feasibility to adopt judicious exploitation of natural resources along with restraint in consumption as well as increased use of regenerative resources, without compromising on economic or lifestyle needs.

Ushering in new set of societal values needs to be done in calibrated manner and with tenacity. It's easier to achieve traction with issues that are manifest in public consciousness. Air pollution, water scarcity and untreated municipal solid waste impact health of citizens in most cities of India. Hence, highlighting these environment issues, analyzing their causes and showcasing efficacy of remedial measures based on advanced technologies could catalyze widespread awareness and broad-based acceptance. It's emphasized that this needs to be done in a holistic and technology agnostic manner avoiding knee-jerk reaction or eschewing hype, which is a distinct risk with the influence that social media now has on citizens and policy makers.

In case of "Clean Air", particulate emissions from Diwali crackers and vehicles occupy significantly higher mindshare than their actual contribution to particulate emissions. Green crackers and green transport systems are definitely to be mandated and incentivized. At the same time, there needs to be recognition that particulate emissions linked to inefficient burning of biomass (including stubble burning) and construction activity are equally critical issues, which cannot be addressed only through environment laws. There is need to put an economic cost on such environment pollution and resultant health hazards, which should set the norm for extending fiscal incentives to "Green Businesses" that mitigate such environment pollution. Advanced bio-fuels from bio-waste, if adequately incentivized, would make an economic case for organized collecting, aggregating and processing of biomass/ agri-waste to assured quality solid/ gaseous/ liquid biofuel products that can replace fossil fuels at affordable prices. Likewise, green construction materials and construction practices, if incentivized, would mitigate adverse environmental impact of buildings and infrastructure projects.

"Clean Water" availability is perhaps the biggest challenge that India faces. Niti Aayog's "Composite Water Management Index (CWMI)" Report of 14th June 2018 indicates that (i) 600 million Indians experience high to extreme water stress (ii) 75% households do not have access to drinking water on premises, while 84% of rural households do not have piped access (iii) 70% of water is contaminated, which ranks India as 120 out of 122 countries in terms of water quality. The crisis is huge and its imperative that water conservation and treatment/ re-use is rapidly scaled up. Behavioral change in water use can come only though the levers of pricing and controlled supplies, while extending DBT support to economically weaker sections of society. Rain water harvesting and used water treatment and re-use (for all applications, beyond those involving human intake) must be mandated for all establishments, commercial and industrial (C&I) as well as residential. To achieve this, apart from laws and regulations, it is necessary to establish an enabling eco-system, comprising green entrepreneurs and supportive financing instruments. This will enable implementation of sustainable water management schemes under "green business" framework, with efficacy and accountability. Likewise, for water conservation in agriculture, solar irrigation pumps scheme must mandate downstream "micro-irrigation" systems, which will incentivize low water intensive farming.

"Waste Management" has seen a reasonable amount of traction, through the Swatch Bharath Abhiyan. However, there is need to institutionalize systems and introduce technology interventions to ensure (i) source segregation of solid waste (ii) collection and aggregation of segregated waste (iii) appropriate processing of green waste along with controlled disposal of segregated 'dry' waste and hazardous waste (iv) deployment of advanced bio-technologies for higher value products from processing solid waste. In case of solid waste, too, implementation should be under "green business" framework, with efficacy and accountability.

In conclusion, I will recount a Cree Indian proverb, "Only when the last tree has died and the last river has been poisoned and the last fish has been caught, will we realize we cannot eat money" as well as quote Robert Swan, "The greatest threat to our planet is the belief that someone else will save it".

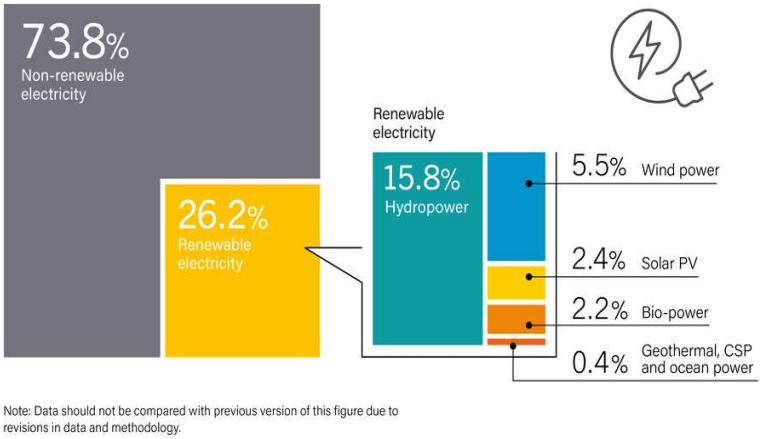
KOLLURU KRISHAN
Chairman SCGJ

RENEWABLES 2019 GLOBAL STATUS REPORT A COMPREHENSIVE ANNUAL OVERVIEW OF THE STATE OF RENEWABLE ENERGY.

.Extracts of REN 21 Report

The year 2018 saw a relatively stable market for renewable energy technologies. Total renewable power capacity grew at a consistent pace compared to 2017, and the number of countries integrating high shares of variable renewable energy (VRE) continued to rise. Corporate sourcing of renewables more than doubled compared to 2017, and renewables have spread in significant amounts all around the world.

Estimated Renewable Energy Share of Global Electricity Production, End-2018



Note: Data should not be compared with previous version of this figure due to revisions in data and methodology.

REN21 RENEWABLES 2019 GLOBAL STATUS REPORT

Renewable energy has been established globally as a **mainstream source of electricity** generation for several years.2 The estimated share of renewables in global electricity generation was more than 26% by the end of 2018.3 Net capacity additions for renewable power were higher than for fossil fuels and nuclear combined for a fourth consecutive year, and renewables now make up more than one-third of global installed power capacity.4 This is due in part to stable policy initiatives and targets that send positive signals to the industry, along with decreasing costs and technological advancements.

Renewable energy has been established globally as a mainstream source of electricity generation for several years.2 The estimated share of renewables in global electricity generation was more than 26% by the end of 2018.3 Net capacity additions for renewable power were higher than for fossil fuels and nuclear combined for a fourth consecutive year, and renewables now make up more than one-third of global installed power capacity.4 This is due in part to stable policy initiatives and targets that send positive signals to the industry, along with decreasing costs and technological advancements.

Renewable power is **increasingly cost-competitive** compared to conventional fossil fuel-fired power plants. By the end of 2018, electricity generated from new wind and solar photovoltaics (PV) plants had become more economical than power from fossil fuel-fired plants in many place. In addition, in some locations it was more cost-effective to build new wind and solar PV power plants than to continue to run existing fossil fuel power plants. Record-low bids in tenders for renewable power were held in many countries around the world, especially for solar PV and wind power, although this development was not necessarily positive for the industry

As in previous years, renewables saw far less growth in the heating, cooling and transport sectors than in the power sector. The uptake of moderni renewable energy for heating and cooling in buildings and industrial applications progressed at a slow pace, while the use of biofuels for transport grew moderately during the year. Progress in these sectors remains constrained by a lack of strong policy support and slow developments in new technologies (such as advanced biofuels).

Renewable energy targets are in place in nearly all countries, and several jurisdictions made their existing targets more ambitious in

2018. The number of renewable energy **support policies** increased again during the year, mostly for renewable electricity. In the power sector, a general shift to auctions from feed-in policies and other support mechanisms continued, but feed-in policies remained widely used. The number of countries with mandates for renewable heat in buildings fell by one in 2018, while policy examples for renewable energy support in industry remained scarce. No new countries added regulatory incentives or mandates for renewable transport, although some countries that already had mandates added new ones or strengthened existing ones. Only one country (Austria) had enacted a policy directly linking renewables and electric vehicles (EVs) by year's end.

In developing and emerging economies, distributed renewable energy systems continued to play an important role in connecting households in remote areas to electricity services. An estimated 5% of the population in Africa and 2% of the population in Asia has access to electricity through off-grid solar PV systems.7 In 2017, the global population lacking access to electricity fell below 1 billion, with around 122 million people worldwide gaining access since the previous year.8 During the same period, around 100 million people gained access to clean cooking facilities.9 However, finance for energy access decreased in 2018 for the second year running and remains far behind the estimated amounts needed to reach universal access to electricity and clean cooking.

At the sub-national level, community renewable energy projects have spread, mostly in the power sector.11 The 2018 European Union (EU) Renewable Energy Directive included

A definition of "renewable energy communities" and the basis for developing national rules to support community initiatives.12 In addition, the prevalence of prosumersii is growing, while attention to their legal and regulatory options for participating in local energy markets and networks grew during the year.13 Sub-national governments continued to sign on to renewable energy and energy efficiency initiatives in 2018, often setting more ambitious targets than their national counterparts.14 Additional communities, cities and regions introduced 100% renewable energy targets in 2018, and by year's end at least 100 cities were sourcing 70% or more of their electricity from renewables

The **private sector** is playing a key role in driving renewable energy deployment through its procurement and investment decisions. By early 2019, 175 companies had joined RE100 – committing to 100% renewable electricity targets – up from 130 companies the year before.16 These and other private sector targets have supported the expansion of corporate power purchase agreements (PPAs), which are spreading to new countries and regions but remain concentrated in the United States and Europe

Global investment in renewable power and fuels in 2018 totalled USD 288.9 billion (USD 304.9 billion including hydropower plants larger than 50 megawatts, MW); this was an 11% decrease from the previous year (largely as a result of a significant fall in China) but the fifth year in a row that investment exceeded the USD 230 billion mark.21 With more or less stable growth in renewable power capacity, the decline in investment reflects to some extent the falling costs of renewables – essentially, more capacity can be installed for less money Nearly all of the investment was in solar PV and wind power.23 Developing and emerging economies accounted for 53% of total

renewable energy investment, with China alone accounting for 32% of the total. everal developing countries are investing equivalent or higher amounts in renewable power and fuels than developed countries on a per gross domestic product (GDP) basis, particularly as energy demand continues to increase at a faster rate in developing markets, such as in Djibouti, Morocco and Palau.

Developments not directly linked to renewables are continuing to open opportunities for increased use of renewable electricity in the end-use sectors, such as heating and transport. These include a significant increase in incentives and targets for electrification of transport and bans on fossil fuel-powered vehicles in a few jurisdictions. The cost-competitiveness of renewable electricity for heating depends strongly on local fuel and electricity prices; however, the use of heat pumps continues to grow in major markets around the world, such as in Europe.26 In addition, digitalisation and smart metering are offering more options for supply-side and demand-side management.

The 24th Conference of the Parties to the United Nations (UN) Framework Convention on Climate Change, held in Poland, ended with an agreement on implementation of the Paris Agreement, although many details were left unresolved.33 Calls stressed the need for a rapid and just transition to renewable energy, and the timeline for the next Nationally Determined Contributions (NDCs) was confirmed.

Edited by

Dr. P.Saxena, CEO,SCGJ

Today the role of women in our societies is increasingly becoming critical due to their contribution in social and economic development. However, despite their role and growing economic power, women continue to face greater risks and lack access to equal opportunities. Women also remain poorer and less educated, are paid less at work, and face discrimination at home and their workplace. Women spend at least twice as much time as men on unpaid domestic work, making their average paid and unpaid work hours longer than men's in every region. Women also lack access to and control over financial resources, which reduces their autonomy and increases their vulnerability.

Economic activity of majority of women currently is beyond the formal sector as they do not own the land they work on, they sell products at market without establishing a formal business, they work domestically in their home or someone else's home. The vast majority of poor women are engaged in subsistence agriculture. In rural areas women and girls are the primary energy producers for the household. Further, they are dependent on small-scale agriculture and locally available resources to support their livelihoods and to fulfil their family commitments.

Women and girls are often responsible for collecting fuel and water for their families. As per the U.N.D.P. report (2013) in India, women gather firewood, crop waste and cattle dung to fulfill 92 percent of their energy needs. Thus, energy poverty leads to drudgery, greater health risks and a lack of time to focus on income-generating, educational or other self-nurturing (e.g. leisure) activities. Providing clean and affordable energy services will therefore directly benefit their health and well-being. This will also provide opportunities for taking up beneficial ventures like education, income generating enterprise and also plenty of time for rest and leisure.

In the renewable energy sector, the share of women in most workplaces is significantly less especially in the technical, managerial and policy making positions (IRENA Report, 2019). Moving towards greater gender equality can be viewed as a tremendous opportunity to ensure that women's needs and perspective are taken into account for energy technologies, market design and community involvement to shape the socio-economic benefits of the energy transition. In order to increase the percentage of women working in both formal and informal sector there is need to focus in four key areas which will enhance the opportunities.

Access to Employment Opportunities

Women often lack access to decent and stable jobs due to low education and greater family needs and absence of fair and transparent workplace practices. Because of its multidisciplinary nature, renewable energy offers a range of unprecedented opportunities for expanding employment in this young and dynamic sector. Supporting women to develop and manage greener technologies and renewable energy sources will provides new avenues for employment with economic empowerment.

Education and Skills development

Women may not have access to proper education which may prevent them from securing higher-skilled jobs and limit their professional advancement. Skill development for promoting women entrepreneurship can help stimulate the economy, enhance the consumer base and provide new inputs or services. Ministry of Skill Development and Entrepreneurship (MSDE), Govt. of India is committed to facilitate growth of women entrepreneurs in the country and has designed Entrepreneurship Development Programs for the rural women, with the objective to inculcate entrepreneurial values, attitude and motivation among the Rural women to take up challenges to set up an enterprise/Group Enterprises.

Gender Sensitive Policies

Women in the developing world may require additional policies for making their places of employment or communities' safe and incident free. Although women and girls are affected by inequitable energy policies across various levels, they nonetheless play a key role in energy. production, utilization and conservation. Smart energy policies should therefore be developed with due consideration to their needs, concerns and unique contributions. There is also a need to mainstream gender in formulation of energy access policy so as to ensure women are a part of the solution and their role as energy users, community members and business owners is fully recognized.

Promoting access to finance

Many women lack access to bank accounts and also often have no financial independence, as they have no say in spending decisions. Financial literacy training to women would help them manage household income and spending, as well sector as to increase understanding of and trust in formal banking systems. Improving access to finance is a big support for women engagement in the renewable energy. Linking women to dedicated financing schemes can

facilitate an active role in the renewables value chain and tap into the range of opportunities created by modern energy services.

In a recently concluded panel discussion in June 2019, organized by Centre for Energy, Environment and Water (CEEW), focusing on best practices and implementation challenges to create gender sensitive workspaces in the public policy sector. Some of the key takeaways from the panel discussions were:

Gender neutral policies are imperative to promote equality at workplaces. Regular gender audits to assess if a workplace is truly gender neutral and female friendly, including measuring gender-based key performance indicators of organisations, are required. Regular gender sensitisation seminars and workshops must be conducted. Finally, whether within an organisation or outside, women need to help each other. One way of doing this is through mentorship.

In conclusion it may be mentioned that greater employment of women especially in the renewable energy sector will draw additional talent and create workforce at all levels including senior positions. This will benefit the organization in terms of growth, culture and sustainability. A fair energy transition will bring more equity across all social and economic groups, but will also benefit women and children the most in the context of energy access. Transition to renewable energy will be faster if gender is established as a pillar of energy strategies both at the national and global levels leading to acceleration of attainment of multiple Sustainable Development Goals.

Dr. (Mrs.) Praveen Dhamija

Advisor, SCGJ (Biomass & Sustainable Livelihood)

IRENA reports renewable energy now accounts for a third of global power

A Report

In 2018, 171 GW of renewable energy capacity was added globally, according to new data released by the International Renewable Energy Agency (IRENA). Of this annual increase of 7.9%, solar and wind energy accounted for 84% of the growth. Thanks to this increase, a third of global power capacity is now based on renewable energy.

IRENA's annual indicates growth in all regions of the world, although at varying speeds. Nearly two-thirds of all new power generation capacity added in 2018 was from renewables, led by emerging and developing economies. While Asia accounted for 61% of total new renewable energy installations and grew installed renewables capacity by 11.4%, growth was fastest in Oceania, which witnessed a 17.7% rise in 2018. Africa's 8.4% growth put it in third place just behind Asia.

Through its compelling business case, renewable energy has established itself as the technology of choice for new power generation capacity," said IRENA Director-General Adnan Z Amin.

"The strong growth in 2018 continues the remarkable trend of the last five years, which reflects an ongoing shift towards renewable power as the driver of global energy transformation. Renewable energy deployment needs to grow even faster, however, to ensure that we can achieve the global climate objectives and Sustainable Development Goals." Compared the growth in generation capacity of renewables versus non-renewable energy, mainly fossil fuels and nuclear. While non-renewable generation capacity has decreased in Europe,

North America and Oceania by about 85 GW since 2010, it has increased in Asia and the Middle East over the same period. Since 2000, non-renewable generation capacity has expanded by about 115 GW per year (on average), with no discernible trend upwards or downwards.

Unfortunately for hydropower, growth continued to slow in 2018, IRENA says, with only China adding a significant amount of new capacity, at about 8.5 GW.

Globally, total renewable energy generation capacity reached 2,351 GW at the end of last year – about a third of total installed electricity capacity. Hydropower accounts for the largest share with an installed capacity of 1,172 GW – about half of the total. Wind and solar energy account for most of the remainder, with capacities of 564 GW and 480 GW, respectively. Other renewables included 121 GW of bioenergy, 13 GW of geothermal energy and 500 MW of marine energy (tide, wave and ocean energy).

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RPL 4 – A success story in SCGJ

Recognition of Prior Learning (RPL) is a certification framework - which will assess those who have acquired skills informally and then recognize them with a formal certification.

MSDE and NSDC through RPL 4 type, is ensureing wider outreach to the large uncertified workforce across the country, primarily in organized sector, through direct partnerships with Sector Skill Councils and industry/ corporates .

Skill Council for Green Jobs was sanctioned a total target of 72,514. This target has been achieved from the sectors of Solar Energy and Waste Management.

RPL 4 "BiCE" 1st Phase Performance	
States	Employees
Andhra Pradesh	74
Assam	16180
Bihar	12356
Delhi	2677
Haryana	433
Jammu and Kashmir	14584
Jharkhand	9432
Madhya Pradesh	157
Maharashtra	517
Odisha	539
Rajasthan	4684
Tamil Nadu	833
Uttar Pradesh	9798
West Bengal	250
Total Number	72514
Total Certified	72314

1848 सफाई कर्मचारियों को बनाया हाईटैक

❖स्किल इंडिया के तहत दी गई ट्रेनिंग

अलीगढ। स्किल्ड इंडिया के तहत प्रधानमंत्री कौशल विकास योजना के तहत गुरूवार को ट्रेनिंग पूरी हो गई। ट्रेनिंग करने वाले नगर निगम और ए-ट्र-जैड के 1848 सफाई कर्मचारियों को प्रमाण पत्र-स्मृति चिन्ह बांटे गए।

स्किल काउंसिल फॉर ग्रीन जॉब एजेंसी की कंसलटेंट अंजना वाधवा ने कहा कि इस योजना के तहत 2016 से 2020 तक एक करोड़ युवाओं को उद्योग प्रशिक्षण कौशल प्रशिक्षण देगा। नगर निगम सफाई कर्मचारियों को सफाई कार्य में निपुण करने व अधिक से अधिक सुरक्षा उपकरणों का प्रयोग करने के विषय पर जनवरी से अब तक सफाई कर्मचारियों को ट्रेनिंग दी गई। 1848 सफाई कर्मचारियों को ट्रेनिंग देकर उन्हें सफाई कार्य में निपुण बनाया। ट्रेनिंग करने वाले सफाई कर्मचारियों को ट्रेनिंग का पैसा व दो लाख का बीमा का लाभ देने के साथ-साथ ट्रेनिंग

बाद कुशल सफाई कर्मचारियों को प्रमाण पत्र दिए गए। नगर स्वास्थ्य अधिकारी डॉ शिव कुमार ने कहा कि स्वच्छता की पहला पायदान सफाई कर्मचारी है। ट्रेनिंग का मुख्य उद्देश्य सफाई कर्मचारियों को आधुनिकता से जोड़ना है।

इस दौरान नगर आयुक्त सत्य प्रकाश पटेल, जोनल सफाई अधिकारी इंद्रजीत सिंह, स्वच्छता निरीक्षक डॉ रामजीलाल, एमपी सिंह, आरसी सैनी, अनिल आजाद, एसबीएम सहायक धर्मवीर सिंह, मीडिया सहायक अहसान रब, एटूजैड हैड समय सिंह, सफाई कर्मचारी संघ अध्यक्ष प्रदीप भंडारी, महामंत्री राधे धूरी आदि मौजूद रहे।

Sectors	Approved Targets	% Achievement on Enrollment	% Achievement on (Assessment Approved by SSC)	Enrolled to Assessed %	Registered	Enrolled	Not Appeared	Assessed	Certified
Green Jobs	**72514**	**99%**	**99%**	**100%**	**84808**	**72133**	**150**	**71711**	**71679**

Green Jobs & National Apprenticeship Promotion Scheme

Skills and knowledge are the driving forces of economic growth and social development in a country. As opposed to developed countries, where the percentage of skilled workforce is between 60% and 90% of the total workforce, India records a low 5% of workforce (20-24 years) with formal vocational skills. Realizing the importance, more than 20 Ministries/Departments run 70 plus schemes for skill development in the country. The National Skill Development Mission launched by the Ministry of Skill Development and Entrepreneurship on July 15, 2015, aims to create convergence across sectors and States in terms of skill training activities. Besides consolidating and coordinating skilling efforts, it also aims to expedite decision making across sectors to achieve skilling at scale with speed and standards. Further, to achieve the vision of 'Skilled India', National Skill Development Corporation (NSDC) created to expedite decision making across sectors to achieve skilling at scale with speed and standards.

Under operational framework of NSDC, there are 38 Sector Skill Council in India. Since its inception, one of the major pillars of NSDC's strength are Sector Skill Councils (SSCs), which play a vital role in bridging the gap between what the industry demands and what the skilling requirements ought to be.

Under MSDE, there are different schemes and initiatives to promote Skill Development in the Country as:

- **Pradhan Mantri Kaushal Vikas Yogyana (PMKVY)**
- **National Apprenticeship Promotion Scheme**
- **UDAAN**
- **Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)**
- **WorldSkills India Competitions**
- **IndiaSkills Competitions**
- **Technical Intern Training Program(TITP)**
- **Jan Shikshan Sansthans**

NATIOICESHIP PROMOTION

The Government of India launched the National Apprenticeship Promotion Scheme (NAPS) in August 2016, to promote the apprenticeship programme in India by introducing a package of financial incentive to establishments engaging in apprenticeship. This package specially intended to support and promote apprenticeship in the MSME segment for enhancing its productivity and competitiveness as well capacity building. Apprenticeship Training is considered to be one of the most efficient ways to develop skilled manpower for the country by using training facilities available in the establishments without putting any extra burden to set up training infrastructure. It provides for an industry led, practice oriented, effective and efficient mode of formal training. A new "Operational Framework for Apprenticeship in India (including National Apprenticeship Promotion Scheme)" was launched on 15th July 2018, with an aim to make apprenticeship engagement smoother both for the industry and the youth.

As per the scheme, Government of India will share 25% of prescribed stipend subject to a maximum of Rs. 1500 per month per apprentice with the employers. Government of India will also share maximum Rs.7500 per fresher apprentice (without any formal trade training) as a cost of basic training with Basic Training Providers.

Scheme components

Sharing of 25% of prescribed stipend subject to a maximum of Rs. 1500/- per month per apprentice with the employers. The stipend support would not be given during the basic training period for fresher apprentices.

Sharing of basic training cost in respect of apprentices who come directly to apprenticeship training without any formal trade training. Basic training cost will be limited to Rs. 7500/- for a maximum of 500 hours/3 months.

Scheme Scope

This scheme will cover all categories of apprentices except the Graduate, Technician and Technician (Vocational) apprentices which are covered by the scheme administered by Ministry of Human Resource Development.

Scheme Targets

Target under the scheme shall be 20 lakh apprentices in 2019-20. The engagement of fresher apprentices shall be 20% of total annual target.

Implementing Agencies of Scheme

CEOs of SSCs notified as Joint Apprenticeship Advisors (JAAs) for online Registration of contracts between employers and candidates (in case they opt for stipend subsidy under NAPS)

Key features of Scheme

Wider options for the apprentices - integration with other schemes Courses under PMKVY/MES will be linked with apprenticeship training. These courses will be given the status of optional trades & the relevant practical content for On-the-Job training will be added by SSC/NCVT as the case may be. The total duration of On-the-Job/Practical training

for these courses will be of one year (excluding the period of basic training)

f. Trades of Scheme

• Designated trade: Designated trade means any trade or occupation as notified by the Government. At present, there are 261 designated trades are available for apprenticeship training.

• Optional trade :

 PMKVY/MES - Courses under PMKVY/MES with a duration of minimum 500 hrs. as basic training component and a one year practical content for on-the-job component designed by SSC/NCVT will be declared as optional trades.

INITIATIVES OF SKILL COUNCIL FOR GREEN JOBS UNDER NAPS

Skill Council for Green Jobs (SCGJ) is the SSC focusing development of competencies /skills in the domain of renewable energy, sustainable development and waste management. The Council is an industry led and industry driven organization set up in October 2015 and is promoted by the Ministry of New and Renewable Energy (MNRE) and Confederation of Indian Industry (CII). It is responsible for quality assurance through accreditation of the skills acquired by trainees, curriculum development for the skills training, qualification framework and setting of standards and benchmarks, recruitment and placement of trained and skilled workforce, as well as a data collection, management and provider to the industry. The SCGJ scope covers the entire gamut of "Green Businesses", viz Renewable Energy, Energy Storage, Carbon Sinks, Green Construction, Green Transport, Solid Waste Management.SCGJ has created 47 QRC approved Job roles of which 20 are approved by NSQC. At present, two job roles are aligned with NAPS as Solar PV Manufacturing Technician and Solar PV Business Development Executive.

The job role of Solar PV Manufacturing Technician is at NSQF level 4 and is responsible to clean and check the front glass cover for the PV module; monitors the process of soldering solar cells to the strings to make interconnect, lamination of modules, framing of solar PV module, module testing and packaging for transit. The course is designed for 1 month Basic training and 5 months on job training.

The second job role of Solar PV Business Development Executive is at NSQF level 6 and is responsible for highlighting the benefits of using solar power to develop and generate the business for the organization. He/she has the understanding of the rooftop market, ground mount market and decentralized solutions market to propose the right kind of solution to meet the specific needs of the respective clients. He/she keeps track of central and state solar policies/programs and has good understanding of the solar PV technology, its applications and economics. The course is designed for 1 month Basic training and 5 months on job training.

To promote and implement NAPS, SCGJ invited 12 major organizations and one to one interaction was held with M/s Kotak Solar, M/s Jakson, M/s Mahendra Susten and M/s Tata Power Limited. M/s Jakson and M/s Mahendra Susten have shown interest to go further. SCGJ also identified Third Part Aggregators registered with NSDC to associate with industries to convene trainings on Solar PV Manufacturing Technician and Solar PV Business Development Executive. Further SCGJ is aggregating demand for apprenticeship training and develop Model curriculum for Solar PV Installer (Suryamitra) and Recyclable Waste Collector & Segregator. Apprenticeship in Green jobs will facilitate creation of a significant workforce which will have an immense contribution in meeting the National goals of promoting renewable energy and creating a sustainable environment.

Sarvesh Pratap Mall
Technical Associate, SCGJ

FICCI 2nd Skill Development Committee Meeting' 2019

2nd Skill Development Committee (SDC) meeting of the year was held on Tuesday, May 21, 2019. Mr. Bijay Sahoo, Chair, SDC & President-HR, Reliance Industries is chairing the committee. The meeting was attended by eminent members representing stakeholders from Skill Development Ecosystem. Skill Council for Green Jobs represented by Dr. P.Saxena CEO is the member of the committee.

Mr. Bijay Sahoo, Chair, mentioned that key requirements to make India a 'Skill Capital' is to determine which kind of skill changes are happening in terms of new-age technologies. "skills and knowledge are the driving forces of economic growth and social development for any country. It is no surprise that governments globally are focusing on the significant role vocational education and training plays in their countries' futures. At a time when skills gap is a major concern globally, investing in skill development has never been so important." He further added that there is an urgent need to make our people future ready in order to make them job ready for both - Indian and International employability. Once the people are job ready, the second key component is to facilitate them with jobs not only in India (as they are limited) but overseas as well.

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Skill Council for Green Jobs through Numbers

Financial Year wise Training Status as on 31.052019

S.No.	Name of the Scheme	2016-2017			2017-2018			2018-2019			2019-2020			Cumulative		
		Trained	Assessed	Certified	Trained	Assessed	Certified	Trained	Assessed	Certified	Trained	Assessed	Certified	Total Trained	Total Assessed	Total Certified
1	PMKVY Short Term	0	0	0	11705	10951	10173	12434	11180	10292	2664	2376	2257	26803	24507	22722
2	PMKVY 1	383	366	161										383	366	161
3	PMKVY RPL 1,2&3	0	0	0	899	664	638	1254	840	839	2669	2665	2665	4822	4169	4142
4	PMKVY RPL 4	0	0	0	0	0	0	14222	10040	10031	37450	37417	37371	51672	47457	47402
5	PMKVY Special Project	0	0	0	0	0	0	523	371	357	18	17	17	541	388	374
6	PMKVY CSSM - Centrally Sponsored State Managed Component	0	0	0	0	0	0	792	542	489	263	261	233	1055	803	722
7	Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY)	0	0	0	0	0	0	1097	930	794	95	87	84	1192	1017	878
8	Utkarsh Bangla- PMKVY PBSD (Pashchim Banga Society for Skill Development)	0	0	0	0	0	0	0	0	0	146	125	117	146	125	117
9	AICTE- PMKVY Techical Colleges	0	0	0	0	0	0	1154	1154	1154	0	0	0	1154	1154	1154
10	Deendayal Antyodaya Yojana- National Urban Livelihoods Mission (DAY- NULM)	0	0	0	0	0	0	330	308	303	0	0	0	330	308	303
11	NSKFDC- National Safai Karamchari Finance & Development Corporation	0	0	0	1238	1204	1204	8490	7882	7882	1786	1729	1729	11514	10815	10815
12	NBCFDC- National Backward classes finance & Development Coporation	194	177	175	411	374	359	138	133	133	0	0	0	743	684	667
13	Andhra Pradesh Skill Mission	0	0	0	300	298	298	650	645	643	0	0	0	950	943	941
14	Uttrakhand Skill Mission	0	0	0	30	25	23	0	0	0	0	0	0	30	25	23
15	Gujarat Skill Development Mission	0	0	0	128	99	85	415	260	257	0	0	0	543	359	342
16	RSLDC - Rajasthan Skill & Livelihoods Development Corporation	0	0	0	0	0	0	386	349	310	185	179	173	571	528	483
17	Bihar Skill Mission	0	0	0	0	0	0	28	24	24	0	0	0	28	24	24
18	PMKVY 2.0 BSDM (Bihar Skill Development Mission)	0	0	0	0	0	0	25	25	25	0	0	0	25	25	25
19	Odhisha Skill Development Mission	0	0	0	0	0	0	493	460	419	0	0	0	493	460	419
20	Asaam Skill Development Mission- PMKVY ASDM	0	0	0	0	0	0	57	47	47	0	0	0	57	47	47
21	Market Mode Paid Programs	80	80	61	1658	1596	1560	4985	4541	4460	702	628	549	7425	6845	6630
22	MNRE Sponsored Suryamitra	2998	2789	2553	9783	9328	8908	11515	11112	10800	2741	2696	2614	27037	25925	24875
23	CB_Scheme- North-East Candidates	0	0	0	120	117	114	126	116	110	0	0	0	246	233	224
24	CSR Projects	0	0	0	0	0	0	518	473	465	0	0	0	518	473	465
	Total:	3655	3412	2950	26272	24656	23362	59632	51432	49834	48719	48180	47809	**138278**	**127680**	**123955**

Compiled by

Sonia Parashar
Skill Council for Green Jobs

Solar Applications to bridge the sustainability gap – Skills, Entrepreneurship and Technology

11:45 – 13:00 hours, 5th April 2019, Mumbai.

Despite admirable efforts on grid expansion achieved over the last decade, household-level electrification and availability of power particularly for livelihoods and productive use, continue to be a challenge.

Clean energy solutions such as Decentralized Solar Applications have so far played a vital role in meeting the power requirements of unserved and under-served communities, in the absence of the grid. The draft National Energy Policy (June 2017) too has highlighted the role of these solutions in providing reliable and affordable electricity. Growing awareness, falling prices, technology improvements, skills and entrepreneurship development are making decentralised systems a preferred choice for consumers and policy makers across the globe. , the session :

- **Deliberated on the achievement of sustainable development outcomes (like education, livelihoods, technology innovations, skills and entrepreneurship development, etc.) using Solar Energy applications as a converging point**
- **Collectively scaned business and investment opportunities, technology applications and innovations, skills & entrepreneurship development, along with suitable policy and financial environments to bridge the sustainability gap.**

The aim of the session was to deliberate and enable constructive conversations on emergent business models, Solar technology applications and innovative deployment, skills development, entrepreneurship development, financing and corporate engagement, and related factors having development impacts on education & skills, access to drinking water and irrigation, sustainable livelihood, and so on, converging towards Solar Applications to bridge the sustainability gap.

Key takeaways from the session

Blockchain technology and big data analytics will have a lot of application in smart cities requiring the next generation skills and for asset management.

Higher the penetration of DRE systems, higher will be the employment generation.

Electric mobility clubbed with solar charging systems has immense applications and scalability.

A case study on the types of jobs and employment generation potential in the solar manufacturing domain.

Complexity of process in the manufacturing of modules needs highly skilled workforce and advanced level training.

Startup perspective and drivers of change for future skills requirements.

Highly local and specialised skills will be required with cross sectoral applications.

	Speaker Name	Session Topic
	Chair: Mr. Rajesh Kulkarni, Head – Marketing, Hensel Electric India; and Chairman, Curriculum and Content Development committee, Skill Council for Green Jobs	
1	Tanmay Bishnoi, Head – Standards and Research, Skill Council for Green Jobs	Role of Skill Council for Green Jobs to accelerate the deployment of rooftop solar systems
2	Kapil Maheshwari, CEO, Hinduja Renewables	Entrepreneurship opportunities, Skills and technology required to develop 100 smart cities and role of solar energy to accelerate the growth of electric mobility sector
3	Anmol Jaggi, Managing Director, Gensol Group*	Skills and technology required for O&M of ground mount and rooftop SPV power plants to sustain the growing market
4	Bhupendra Singh Rawat, Head – Business Development, Renewsys India Pvt Ltd	Skills and technology required to manufacture solar components supporting Make in India initiative
5	Omkar Jani, Managing Director, Kanoda Systems	Entrepreneurship opportunities, Skills and technology requirements for 24/7 power for all through Renewable energy
6	Sanjay Gupta, CEO, Relipower Technology	Startup perspective on challenges and opportunities for solar entrepreneurs in India and ease of doing business

Impact of Skill Gap on Solar EPC projects

Frequent issues that lead to poor performance and failure of rooftop solar plants arise due to the lack of proper training and negligence, issues like improper crimping, grounding ,tensioning -torsioning of mounting structures due to poor workmanship often lead to hazards threatening both plant and human safety.

The EPC industry is constantly challenged by lack of skilled and effective workforce more often than not these tasks that require a relative degree of specialization are under taken by a contractual and informal labor force .
To perform quality work trained electricians ,technicians, fitters and skilled labor are required on site saving substantial time and money leading to improvement , enhancing longevity of the rooftop solar plant.

In order to fill the supply-demand gap of skilled workforce in solar industry the Skill council for Green Jobs has contributed in promoting directly or indirectly many short term and long term training program across the country for different job role like(Suryamitra in Electrical and Civil installation) Solar PV site engineers and many more .

Technical Challenges

Due to the random and intermittent nature of the renewable sources, integration of it into the grid causes technical challenges which cover the reduction in power quality, power fluctuation causing unreliability in voltage control, mismatch of phase sequence , deterioration of power quality and protection issues arise often which further destabilize the string Inverter and ultimately impact the power generation of the plant.

Another unforeseen risk regarding the performance of the plant as it is possible that despite using the most sophisticated and reliable satellite data, the actual generation at a site varies from the forecast. In case the variation is high, it can lead to lower financial returns on the project.

Repairs and replacement is another risk factor caused due to lack of skill labor available at site as repairs of the modules and inverters can adversely impact the plant generation.
In terms of distribution, there are limits on the total amount of electricity that can be injected in the grid at one point owing to the transformer capacity at that location. This is not a significant barrier currently but may emerge as number of installations go up. The area had consistent high temperatures and significant quantities of dust pollutants (fly ash, acid sludge, tar sludge, coke breeze) that would get deposited on the panels every day.

Policy Barrier

We are yet to come out with uniform policies on net metering that allow users to sell surplus power to utilities. Unfortunately, neither the Centre nor the state governments have clarity about their net metering policies, which hold the key to the widespread adoption of rooftop solar across the country.

Recently, Maharashtra State Electricity Distribution Company (MSEDCL) proposed in a petition to shift from net metering to gross metering, a move which could make rooftop solar unviable for many consumers. Currently some states, such as Karnataka, Andhra Pradesh and Uttar Pradesh, allow consumers to choose between a net metered and a gross metered system.
The size limit sidelines a large number of commercial and industrial consumers from installing rooftop solar to meet their power needs.
The Indian rooftop solar power industry is steadily growing, but much faster growth is required to meet the government's ambitious target of 40 GW by 2022. Despite the challenges mentioned above, there are a number of steps that can be taken to align risk and opportunity across the value chain by bringing all the stake holders on single platform and address their respective concerns.
A common onlin portal need to develop for all the stake holder where all the trained manpower can register on portal and EPC company can directly recruit the trained work force, also such portal shall be used for single window clearance of Net metering application, electrical inspector clearance and for other compliance approval.

Prem Bharti
Technical Associate ,SCGJ

Solar Skill Competition at RenewX

SCGJ organized Solar Roof top skill Competition at Hyderabad on 26th and 27th April 2019

The recently released 'State of Working India Report 2019', by the Bangalore-based Azim Premji University reports, about 50 lakh men losing jobs between 2016 and 2018. It further adds that India's overall unemployment rate, at around six per cent, is double than that of the last decade. This along with multiple other findings those including the ones from the February 2019 N.S.S.O. data draw attention to how half of India's working-age population (over 15 years) is not contributing to any economic activity. The report also highlighted the labour force participation rate (LFPR) – the proportion of a country's working-age population that engages actively in the labour market – standing at 49.8 per cent in 2017-18, falling sharply from 55.9 per cent in 2011-12.

Despite the government, civil society, industry and independent organizations in a constant tussle over numbers, it stands abundantly clear that there are ripples across our social fabric that indicate that all might not be well. The 'State of Working India Report 2019' found India's unemployed to be mostly the higher educated and the young. The age group 20-24 years being hugely over-represented among the unemployed additionally on the other end the less educated and the likely informal workers have seen losses in jobs and reduced opportunities of livelihood.

In times when India and humanity at large are beginning to debate on a 'Universal Basic Income', when the crucial problem isn't creating new jobs but new jobs that humans perform better than algorithms. Finding meaningful and fulfilling work for our people must remain our utmost priority. Renowned historian and thinker Yuval Noah Harari takes the chilling view that technology is going to make many jobs obsolete and that huge numbers of largely unemployable people will find themselves part of a "useless class" trying to find meaning in a world without work.

We are witness to a unique time in history. While on one hand while tectonic shifts in technology, innovation and automation threaten the labour market, World over we are united and driven by our fight against Climate Change and our commitments to a greener tomorrow. The change is inevitable, our opportunity as a nation lies in giving mindful and deliberate direction to the outcome of this change. These times present us the opportunity to re-think, re-structure and leapfrog our economic model. India must not only prepare itself to harness fully this opportunity it should strive to be a global leader shaping this new paradigm. Creating Green jobs backed with a robust and dynamic skilling revolution promises the way forward. The International labour organization defines green jobs as decent jobs in any economic sector (e.g. agriculture, industry, services, administration) which contribute to preserving, restoring and enhancing environmental quality. Green jobs reduce the environmental impact of enterprises and economic sectors by improving the efficiency of energy, raw materials and water; de-carbonizing the economy and bringing down emissions of greenhouse gases; minimizing or avoiding all forms of waste and pollution; protecting or restoring ecosystems and biodiversity; and supporting adaptation to the effects of climate change.

The Green New Deal (GND) is a proposed stimulus program with origins in the United States, aiming to address climate change and economic inequality. It envisages a 'detailed national, industrial, economic mobilization plan' capable of making the U.S. economy 'carbon neutral' while promoting 'economic and environmental justice and equality'. It is time when India too must seriously look into a massive restructuring of its economy aligned to the needs and demands of the future. A radical transition designed such, that the sustainable livelihood of her peoples is central to the idea.

This is India's chance to turn its crisis into its victory, the task ahead is enormous but then that is precisely why it is also worth accomplishing.

Aditya Tiwari
(Intern, Research & [illegible]nt, Skill Council for Gree[illegible]
M.Tec[illegible]
(Renewable Energy Engineering & Management)

Focus Group Discussion on

Skill Development and Training for Waste Water Treatment Plants

IHC, Delhi 21 May, 2019

Skill Council for Green Jobs (SCGJ) organised a Focus Group Discussion (FGD) on "Skill Development and Training for Waste Water Treatment Plants" on 21 st May, 2019 in Jacaranda Hall of the India Habitat Center to discuss various aspects and need of skill and capacity building in the industrial wastewater treatment processes. The FGD deliberated on the most critical job roles and skill set required to make the system successful. Experts from industries, institutions and Government participated in the Group discussion to deliberate for a road map for skilling and capacity building in the Industrial Wastewater treatment.

Mr. Jigmat Takpa, Joint Secretary, Ministry of Environment, Forest and Climate Change (MOEF&CC) chaired the Focused Group Discussion. While complimenting the efforts of SCGJ in sensitizing and being a catalyst for skill development and green jobs, more specifically in industrial sectors, Mr. Takpa focused on the need of the of water and necessity of waste water management. He drew attention of the Group on the discharge of untreated waste water into the water body and non-compliance of the standards by the industries and municipal bodies vis-à-vis court cases. He further stated that Skill development is the basic foundation for any industries so as to comply with the stipulated discharge standards and thereby preserving the natural water body for the future generation.

Dr. Raman Sharma, Senior Scientist, CSIR-National Environmental Engineering Research Institute from the Delhi Office gave a presentation on the "Way forward to the need based skill development in the area of waste water treatment" He apprised the Group on the capability and contribution of NEERI and offered their services for skill development in waste water treatment more specifically on sampling, samples analysis, treatment plant operation related issues, performance assessment of WTP/STP/ETP/CETP, Hands on training for sophisticated instruments etc.

After a detailed presentations, deliberations, the following issues emerged for the way forward:

i. A programme for Mayapuri CETP be started, to start with, so as to show case the skilling and waste water compliance.

ii.Curriculum and contents for job roles and training types/skilling of Operators, Technicians, etc be prepared.

iii.Other job roles in the segment be defined and curriculum developed for skilling.

iv. Skilling on monitoring and compliance to waste water discharge be stressed.

v. Specialized training for waste water treatment be started both "on the field"and "in class rooms".

vi. "On the job skilling" be encouraged and curriculum be developed and skilling be carried out.

vii. Skilling and training on Operation & Maintenance and Safety be carried out.

viii. Since each industry has different process and different treatment procedures, separate industry wise training be carried out

ix. Skilling and training for industrial clusters and CETPs be imparted.

x. State Pollution Control Boards be taken as knowledge partners and directions from them to industries will ensure for maximum and meaningful participation.

The Editor of this edition

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Sarvesh is working as Technical Associate in SCGJ and involved in R&D in Skill Development activities for six sectors viz Water Management, Solid Waste Management, E-Waste Management, Carbon Sinks, Green Construction and Clean Cooking along with the implementation of CSR sustainability project in villages of Haryana. Sarvesh is passionate about the circular economy advocating Bio-energy and efficient waste management.

Green Jobs News

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Annexure

Sl. No.	Qualification Pack Title	QP Code	NSQF level
1	Solar PV Installer (Suryamitra)	SGJ/Q0101	4
2	Solar PV Installer - Electrical	SGJ/Q0102	4
3	Solar PV Installer - Civil	SGJ/Q0103	4
4	Rooftop Solar Photovoltaic Entrepreneur	SGJ/Q0104	6
5	Solar Proposal Evaluation Specialist	SGJ/Q0105	7
6	Rooftop Solar Grid Engineer	SGJ/Q0106	5
7	Solar PV Business Development Executive	SGJ/Q0107	5
8	Solar PV Site Surveyor	SGJ/Q0108	6
9	Solar PV Structural Design Engineer	SGJ/Q0109	5
10	Solar PV Designer	SGJ/Q0110	7
11	Solar PV Project Helper	SGJ/Q0111	2
12	Solar PV Engineer (Option: Water pumping system)	SGJ/Q0112	5
13	Solar Site In-charge	SGJ/Q0113	6
14	Solar PV Project Manager (E&C)	SGJ/Q0114	7
15	Solar PV Maintenance Technician - Electrical (Ground Mount)	SGJ/Q0115	4
16	Solar PV Maintenance Technician - Civil (Ground Mount)	SGJ/Q0116	4
17	Solar PV O&M Engineer	SGJ/Q0117	5
18	Solar Off Grid Entrepreneur	SGJ/Q0118	5
19	Solar Lighting Technician (Options: Home lighting system / Street lights)	SGJ/Q0201	4
20	Solar PV Manufacturing Technician	SGJ/Q0119	4
21	Solar Domestic Water Heater Technician	SGJ/Q0601	4
22	Solar Thermal Plant Installation & Maintenance Technician	SGJ/Q0602	4
23	Solar Thermal Engineer -Industrial Process Heat (Option: Consultant)	SGJ/Q0603	5
24	Improved Cookstove Installer	SGJ/Q2101	4
25	Portable Improved Cookstove Assembler	SGJ/Q2102	3
26	Portable Improved Cookstove Sales and Maintenance Executive	SGJ/Q2104	4
27	Portable Improved Cookstove Distributor	SGJ/Q2105	6
28	Recyclable Waste Collector and Segregator	SGJ/Q6101	4
29	Safai Karamchari (Options: Wet Cleaning / Mechanised Cleaning)	SGJ/Q6102	3
30	Waste Picker	SGJ/Q6103	3
31	Animal Waste Manure Aggregator (Option: Biogas Plant Operator/Compost Plant Operator)	SGJ/Q6302	4
32	Agri-residue Aggregator	SGJ/Q6201	4
33	Biomass Depot Operator	SGJ/Q6207	4
34	Manager- Waste Management (Elective: Biomass Depot/ Compost Yard/Dry Waste Center)	SGJ/Q6501	6
35	Wastewater treatment plant technician	SGJ/Q6601	4
36	Wastewater treatment plant Helper	SGJ/Q6602	3
37	Septic Tank Technician	SGJ/Q6402	4
38	Desludging Operator	SGJ/Q6403	4
39	Faecal Sludge Treatment Plant O&M Technician	SGJ/Q6404	4
40	Assistant Planning Engineer-Wind Power Plant	SGJ/Q1201	4
41	Site Surveyor Wind Power Plant	SGJ/Q1202	6
42	Construction Technician (Civil)- Wind Power Plant	SGJ/Q1402	4
43	Construction Technician (Mechanical)- Wind Power Plant	SGJ/Q1401	4
44	Construction Technician (Electrical)- Wind Power Plant	SGJ/Q1403	4
45	CMS Engineer- Wind Power Plant	SGJ/Q1501	4
46	O&M Mechanical Technician-Wind Power Plant	SGJ/Q1502	4
47	O&M Electrical & Instrumentation Technician –Wind Power P	SGJ/Q1503	4

Brief Description of Qualification Packs

SOLAR ENERGY				
S. No	Qualification Pack Title	NSQF level	Training hours for Trainee	Description
1	**Solar PV Installer(Suryamitra) SGJ/Q0101** **Trainee Qualification & entry age:** 10th pass + ITI / Diploma (Electrical, Electronics, Civil, Mechanical, Fitter, Instrumentation, Welder) inimum age: 18 years **Trainer Qualification & Experience:** ITI/Diploma+3 years of experience B.Tech+2 years of experience **Assessor Qualification:** ITI/Diploma+5 years of experience B.Tech+3 years of experience And the education qualification c relaxed in case of extraordinary re field experience	4	300	**After the training, the candidate would suitable to work as Solar PV Installer. S/He has the comp tence for mech nical, civil and electrical installation of rooftop Solar PV Power Plants as well as maintaining them properly ensuring proper customer support.**S/He will be trained on Solar PV and will be able to do: • Site Surve for installation of Solar PV Syste • Assess the customer's Solar PV requirement • Procure Solar PV system components • Install Civil and Mechanical parts of Solar PV System • Install Electrical components of Solar PV System Test • and Commission Solar PV System • Maintain Solar Photovoltaic System • Maintain Personal Health & Safety at project site • Customer orientation for Solar PV System S/He will be able to check, configure, install, inspect, test, and ommission differe components of photovoltaic systems, that meet the performance and reliability nee of customers by incorporating uality craftsmanship and complying with all applical codes, standards, and safety re uirements.

2	**Solar PV Installer – Electrical** **SGJ/Q0102** **Trainee Qualification & entry age:** 10th pass + ITI / Diploma (Electrical, Electronics) Minimum age: 18 years **Trainer Qualification & Experience:** ITI / Diploma (Electrical, Electronics)+3 years of experience or B.Tech (Civil / Electrical / Electronics /Electrical and Electronics Eng.) or MSc Physics+2 years of experience **Assessor Qualification:** ITI / Diploma (Electrical, Electronics)+5 years of experience or B.Tech (Civil / Electrical / Electronics / Electrical and Electronics Eng.) or MSc Physics+3 years of experience	4	200	**After the training, the candidate would suitable to work as Solar PV Installer-Electrical. S/He specializes in electrical installations and commissioning of Solar Photovoltaic Systems.**S/He will be trained on Solar PV and will be able to do: • Site Survey for installation of Solar PV System • Install Electrical components of Solar PV System • Test and Commission Solar PV System • Maintain Personal Health & Safety at project site S/He will install, tests, and commissions' different electrical components of photovoltaic systems, that meet the performance and reliability needs of customers by incorporating quality craftsmanship and complying with all applicable codes, standards, and safety requirements.

3	**Solar PV Solar PV Installer – Civil** **SGJ/Q0103** **Trainee Qualification & entry age:** 10th pass + ITI / Diploma (Electrical, Electronics, Civil, Mechanical, Fitter, Instrumentation, Welder, Mason) Minimum age: 18 years **Trainer Qualification & Experience:** 10th pass + ITI / Diploma (Electrical, Electronics, Civil, Mechanical, Fitter, Instrumentation, Welder, Mason)+3 years of experience or B.Tech(Civil/Mechanical /Electrical/ Instrumentation / Electronics / Electrical and Electronics Eng.)+2 years of experience **Assessor Qualification:** 10th pass + ITI / Diploma (Electrical, Electronics, Civil, Mechanical, Fitter, Instrumentation, Welder, Mason) +5 years of experience or B.Tech(Civil/Mechanical /Electrical/ Instrumentation / Electronics / Electrical and Electronics Eng.)+3 years of experience	4	180	**After the training, the candidate would suitable to work as Solar PV Installer – Civil. S/He specializes in civil and mechanical installation of Solar Photovoltaic Systems.**S/He will be trained on Solar PV and will be able to do: • Site Survey for installation of Solar PV System • Install Civil and Mechanical parts of Solar PV System • Maintain Personal Health & Safety at project sit S/He will install different civil and mechanical components of photovoltaic systems that meet the performance and reliability needs of customers by incorporating quality craftsmanship and complying with all applicable codes, standards, and safety requirement.

4	**Rooftop Solar PV Entrepreneur** **SGJ/Q0104** **Trainee Qualification & entry age:** B.E. / B. Tech. / Any Graduate with Science background, preferred. Minimum age: 21 **Trainer Qualification:** B.E. / B.Tech / MSc Physics or B.Tech + MBA Or B.Tech + M.Tech Minimum 5 years of relevant industry experience for B.E./B.Tech / MSc Physics graduates or Minimum 3 years of relevant industry experience for (B.Tech. + M.Tech.) or (B.Tech + MBA) graduates **Assessor Qualification:** Minimum 4 years of relevant industry experience for (B.Tech. + M.Tech.) or (B.Tech + MBA) graduates And the education qualification can be relaxed in case of extraordinary relevant field experience.	6	120	**After the training, the candidate would suitable to work as Rooftop Solar PV Entrepreneur. S/He is an individual having the ability to venture into Solar Rooftop market to lead an enterprise, prepare the feasibility study report and is responsible for the managing the complete Solar rooftop PV project lifecycle.** S/He will be trained on and will be able to: • Carry out market research and prepare a cost estimate for a Rooftop Solar Photovoltaic plant • Prepare site feasibility report • Manage Solar PV project for its entire lifecycle • Entrepreneurship skills • Maintain Personal Health & Safety at project site S/He will be able to venture into Solar Rooftop market to lead an enterprise as S/He would have understanding of solar business models and the technical knowledge of rooftop solar PV plants along with the components available in the local market. S/He will prepare feasibility study report and basic energy generation forecasting using simulation software. S/He will be responsible for the managing the complete Solar PV rooftop project for its life.

5	**Solar Proposal Evaluation Specialist** **SGJ/Q0105** **Trainee Qualification:** B.E. / B.Tech. / BBA / B.Com. / B.Sc. / C.A. with Minimum 2 year of experience in a financial institution / bank / managing project finance for B.E. / B.Tech. / BBA / B.Com. / B.Sc. No experience required for MBA / CA Minimum age: 23 **Trainer Qualification:** B.E. / B.Tech. / BBA / B.Com. / B.Sc. / C.A. Minimum 2 projects or 20 MW of consulting or project finance experience on ground mount solar PV power plants Or Minimum 10 projects or 1000 kWp of consulting or project finance experience on Rooftop solar PV power plants **Assessor Qualification:** B.E. / B.Tech. / BBA / B.Com. / B.Sc. / C.A. Minimum 3 projects or 30 MW of consulting or project finance experience on ground mount solar PV power plants Or Minimum 10 projects or 1500 kWp of consulting or project finance experience on Rooftop solar PV power plants And the education qualification can be relaxed in case of extraordinary relevant field experience	7	80	**After the training, the candidate would suitable to work as Solar Proposal Evaluation Specialist. S/He has competency to review feasibility of the site for installation, assess the techno - commercial feasibility and financial viability of setting up a Solar PV Power Plant.**S/He will be trained on and will be able to: • Check site feasibility of Solar PV Power Plant • Assess the technical feasibility of Solar PV Power Plant • Determine financial viability of the Solar PV Power Plant • Optional: Entrepreneurship Skills S/He will be able to review feasibility report of the site for installation, assess the techno -commercial feasibility and financial viability of setting up a Solar PV Power Plant. S/He will be able to providing techno - commercial advice, preparing lending orfunding documents and write or review Solar PV project report.

6	**Rooftop Solar Grid Engineer** **SGJ/Q0106** **Trainee Qualification:** Diploma (Electrical, EEE) Minimum age: 20 **Trainer Qualification:**Diploma (Electrical, EEE) Or B.Tech/B.E. (Civil, Electrical, Mechanical, Energy) or M.Tech. (Electrical, EEE, Renewable Energy) Minimum 3 years of relevant industry experience for M.Tech. graduates Or Minimum 5 years of relevant industry experience for B.E./B.Tech graduates Or Minimum 6 years of relevant industry experience for Diploma graduates **Assesor Qualification:** Minimum 4 years of relevant industry experience for M.Tech. graduates Or Minimum 6 years of relevant industry experience for B.E./B.Tech graduates Or Minimum 7 years of relevant industry experience for Diploma graduates And the education qualification can be relaxed in case of extraordinary relevant field experience	5	80	**After the training, the candidate would suitable to work as Rooftop Solar Grid Engineer. S/He has competency of pre-commissioning inspection, interconnection and post commissioning testing of grid connected Solar PV Roof Top Power Plants. S/He is able to monitor safe and appropriate performance of the grid connectivity.**S/He will be trained on and will be able to: • Pre-Commissioning Inspection of the Grid Connected Rooftop Solar PV Power Plant • Post Commissioning Testing of the Grid Connected Rooftop Solar PV Power Plant • Maintain Personal Health & safety at project site S/He will be able to checks, audits, inspects and tests different components of the gridconnected Solar PV Power Plant in compliance with all relevant codes, standards, andsafety requirements. S/He will be able to interconnect the solar plant with grid andperform post commissioning tests.

7	**Solar PV Business Development Executive** **SGJ/Q0107** **Trainee Qualification:** B.B.A./B.Com./B.Tech. Minimum Age: 21 **Trainer Qualification:** Any Graduate with two years of Business Development experience in solar PV sector **Assessor Qualification:** Graduate with three years of Business Development experience in solar PV sector	5	140	**After the training, the candidate would suitable to work as Solar PV Business Development Executive. S/He is specialized in developing solar PV business for a company.** S/He will be trained on and will be able to: • Develop and mobilize rooftop solar PV business • Develop of off grid solar PV business • Develop of ground mount solar PV business • Work effectively with others S/He will be able to tell to the client advantages of using solar power devices and systems to develop and generate business for the organization is working for. S/He would have understanding of the rooftop SPV market, ground mount SPV market anddecentralized SPV system market and will be able to suggest right kind of solar solutionto meet the specific needs of the clients. S/He would have fair understanding of the solar PV technology, its applications and economics. S/He would keep track of central and state solar policies/programs to inform the client and let him avail the benefits of same.

8	**Solar PV Site Surveyor** **SGJ/Q0108** **Trainee Qualification:** Diploma/ B.E. / B.Tech preferably in CivilEngineering Experience:3 Years Minimum Age: 25 **Trainer Qualification:** Diploma/ B.E. / B.Tech preferably in CivilEngineering+ 3 years of experience in doing site surveys for Solar PV power plants **Assessor Qualification:** Four years of experience in doing site surveys for Solar PV power plants	6	120	**After the training, the candidate would suitable to work as Solar PV Site Surveyor. S/He is specialized in survey of the site for setting up a solar power plant**. S/He will be trained on and will be able to: • Survey site for installation of ground mount solar PV power plant • Survey site for Installation of rooftop solar PV power plant • Maintain personal health & safety at project site • Work effectively with others S/He would be able to survey the proposed site, provide complete land map withelevations, arrange for soil testing & test reports, provides details of approach to site,water table at site, quality of ground water, availability of water for module cleaning atsite, availability of grid, location nearest substation where the solar power is to bedelivered etc. For rooftop solar power plants, s/he would be able to survey rooftopfor availability of shadow free open area, roof load bearing capacity, drawings of beamsand columns, load of the building and the voltage at which it is be connected to gridetc.

9	**Solar PV Structural Design Engineer** **SGJ/Q0109** **Trainee Qualification and entry age:** Diploma in Civil Engineering/Structural Engineering Minimum Age: 20 years **Trainer Qualification & Experience** Diploma in Civil Engineering/Structural Engineering+5 years of relevant work experience **Assessor Qualification & Experience** Diploma in Civil Engineering/Structural Engineering+7 years of relevant work experience	5	200	**After the training, the candidate would suitable to work as Solar PV Structural Design Engineer. S/He is specialized in civil and structural design of a rooftop or ground mount solar PV power plant**.S/Hewill be trained on and will be able to: • Prepare the civil and structural design of solar PV power plant • Maintain personal health & safety at solar PV project site • Work effectively with others S/He designs the module mounting structures, foundations for the module mounting structures, inverters and transformers and the complete layout of the solar PV power plant including walkways between the module mounting structures civil/ structural work for the control room, and allied structural works for the rooftop or ground mount solar PV power plant

10	**Solar PV Designer** **SGJ/Q0110** **Trainee Qualification:** B. Tech/ B.E. (Solar/ Electrical, Electronics, Civil, Mechanical/ Energy Systems) or M.Tech (Solar/ Renewables/ Energy Studies)+ 3 years of Solar PV experience for B.Tech/ B.E and fresher for M.Tech Minimum Age: 25 **Trainer Qualification:** B. Tech/ B.E. (Solar/ Electrical, Electronics, Civil, Mechanical/ Energy Systems)+ 5 years of Solar PV experience or M.Tech (Solar/ Renewables/ Energy Studies)+ 2 years of Solar PV experience **Assessor Qualification:** B. Tech/ B.E. (Solar/ Electrical, Electronics, Civil, Mechanical/ Energy Systems)+ 6 years of Solar PV experience or M.Tech (Solar/ Renewables/ Energy Studies)+ 3 years of Solar PV experience	7	200	**After the training, the candidate would suitable to work as Solar PV Designer. S/He is specialized in designing of solar PV power plant.**S/He will be trained on and will be able to: • Review the structural design of solar PV power plant • Review electrical design of solar PV power plant • Prepare energy simulation report • Maintain personal health & safety at solar PV project site • Work effectively with others S/He would be able to review civil and electrical design of the Solar PV power plant &prepares the energy simulation report.

11	**Solar PV Project Helper** **SGJ/Q0111** **Trainee Qualification:** 5th pass preferably Minimum Age: 18 **Trainer Qualification:** 10th Pass+ ITI Or Diploma in technical education+ 2 years of hands-on working experience of Installation and Maintenance of Solar PV power plants **Assessor Qualification:** 10th Pass+ ITI Or Diploma in technical education+ 3 years of hands-on working experience of Installation and Maintenance of Solar PV power plants and the education qualification can be relaxed in case of extraordinary relevant field experience.	2	200	**After the training, the candidate would suitable to work as Solar PV Project Helper. S/He would be trained to assists in various activities relating to SPV installations both ground mounted and roof top.**S/He will be trained on and will be able to: • Assist in installation and maintenance of solar PV power plant • Assist in installation and maintenance of off grid solar systems • Maintain personal health & safety at workplace S/He would be able to assist in site survey, erection and commissioning activities andmaintenance activities for ground mounted solar PV power plants as well as roof topand also assist in installation of off grid solar systems.

12	**Solar PV Engineer** **(Option: Solar Water Pumping Engineer)** **SGJ/Q0112** **Trainee Qualification:** Diploma (Electrical/Electronics/ Civil/ Mechanical) or Pre-final engineering and technology candidate with 3 years of formal engineering education. Minimum Age: 20 **Trainer Qualification:** Engineering Graduate with Minimum 2 years of experience in designing and installation of Solar PV Power plant Or Diploma with Minimum 3 years of of experience in designing and installation of Solar PV Power plant **Assessor Qualification:** Engineering Graduate with Minimum 3 years of experience in designing and installation of Solar PV Power plant OrDiploma with Minimum 4 years of experience in designing and installation of Solar PV Power plant	5	300+ 120 optional	**After the training, the candidate would become Solar PV Engineer. S/He would be trained to design, installation and commission solar PV power plant, its quality assurance and HSE issues.**S/He will be trained on and will be able to: • Prepare site feasibility study report • Design of solar PV power plant • Installation and commissioning of solar PV power plant • Quality Assurance of solar PV power plant & components • Maintain personal health & safety at project site • Work effectively with others S/He would be able to take responsibility of design, installation and commissioning of solar power plant at site, its quality QA and HSE issues. **Option: Solar Water Pumping Engineer:** As part of optional learning, he would also be able to design, install and commission solar water pumping systems.

13	**Solar Site In-charge** **SGJ/Q0113** **Trainee Qualification:** B.E./B.Tech.(Civil/Mechanical/EEE/Instrumentation/Construction Management) with 3 years' experience in solar PV power plant installation and commissioning or M.Tech. / MBA with 1 year of experiencein solar PV power plant installation andcommissioning Minimum Age: 25 **Trainer Qualification:** Any Graduate with 3 years of experience in managing installation & commissioning of solar PV power plants **Assessor Qualification:** Any Graduate with 4 years of experience in managing installation & commissioning of solar PV power plants	6	200	**After the training, the candidate would be suitable to work as Solar PV power plant Site In-charge. S/He will be trained to be responsible for all the activities at site relating to Installation and commissioning of solar PV power plant.**S/He will be trained on and will be able to: • Manage installation and commissioning of solar PV power plant at site • Maintain health & safety at project site • Work effectively with others S/He would receive components of the solar PV power plant, check them forspecifications and quality and get the solar PV power plant installed as per the design.S/He would also get the substation and grid interface constructed incorporating grid codeand regulatory provisions. He will be able to commission DC and AC parts of solarpower plant and undertake grid connection, data acquisition and monitoringequipment installed.

12	**Solar PV Engineer** **(Option: Solar Water Pumping Engineer)** **SGJ/Q0112** **Trainee Qualification:** Diploma (Electrical/Electronics/ Civil/ Mechanical) or Pre-final engineering and technology candidate with 3 years of formal engineering education. Minimum Age: 20 **Trainer Qualification:** Engineering Graduate with Minimum 2 years of experience in designing and installation of Solar PV Power plant Or Diploma with Minimum 3 years of of experience in designing and installation of Solar PV Power plant **Assessor Qualification:** Engineering Graduate with Minimum 3 years of experience in designing and installation of Solar PV Power plant OrDiploma with Minimum 4 years of experience in designing and installation of Solar PV Power plant	5	300+ 120 optional	**After the training, the candidate would become Solar PV Engineer. S/He would be trained to design, installation and commission solar PV power plant, its quality assurance and HSE issues.**S/He will be trained on and will be able to: • Prepare site feasibility study report • Design of solar PV power plant • Installation and commissioning of solar PV power plant • Quality Assurance of solar PV power plant & components • Maintain personal health & safety at project site • Work effectively with others S/He would be able to take responsibility of design, installation and commissioning of solar power plant at site, its quality QA and HSE issues. **Option: Solar Water Pumping Engineer:** As part of optional learning, he would also be able to design, install and commission solar water pumping systems.

13	**Solar Site In-charge** **SGJ/Q0113** **Trainee Qualification:** B.E./B.Tech.(Civil/Mechanical/EEE/Instrumentation/Construction Management) with 3 years' experience in solar PV power plant installation and commissioning or M.Tech. / MBA with 1 year of experiencein solar PV power plant installation andcommissioning Minimum Age: 25 **Trainer Qualification:** Any Graduate with 3 years of experience in managing installation & commissioning of solar PV power plants **Assessor Qualification:** Any Graduate with 4 years of experience in managing installation & commissioning of solar PV power plants	6	200	**After the training, the candidate would be suitable to work as Solar PV power plant Site In-charge. S/He will be trained to be responsible for all the activities at site relating to Installation and commissioning of solar PV power plant.**S/He will be trained on and will be able to: • Manage installation and commissioning of solar PV power plant at site • Maintain health & safety at project site • Work effectively with others S/He would receive components of the solar PV power plant, check them forspecifications and quality and get the solar PV power plant installed as per the design.S/He would also get the substation and grid interface constructed incorporating grid codeand regulatory provisions. He will be able to commission DC and AC parts of solarpower plant and undertake grid connection, data acquisition and monitoringequipment installed.

14	**Solar PV Project Manager(E&C)** **SGJ/Q0114** **Trainee Qualification:** B.E. / B.Tech. inEngineering and technology orConstruction Management or relatedDiscipline+ 6 years of experience in renewable energy/power sector utilities/consulting firms/ PV powerplant installation and commissioning OrM.Sc. / M.Tech. / MBA + 3 years ofexperience in renewable energy/powersector utilities/consulting firms/ PV powerplant installation and commissioning. Minimum Age: 30 **Trainer Qualification:** 7 years of experience in managing installation & commissioning of Solar PV projects for B.E./ B.Tech. in Engineering and Technology Or 5 years of experience in managing installation & commissioning of Solar PV projects for M.Sc. / M.Tech. / MBA **Assessor Qualification:** 8 years of experience in managing installation & commissioning of Solar PV projects for B.E./ B.Tech. in Engineering and Technology Or 6 years of experience in managing installation & commissioning of Solar PV projects for M.Sc. / M.Tech. / MBA And the education qualification can be relaxed in case of extraordinary relevant field experience.	5	80	**After the training, the candidate would be suitable to work as Solar PV Project Manager (E&C) with competency to manage erection and commissioning of one/ multiple solar PV power plants at one site or different sites.**S/He will be trained on and will be able to: • Manage installation of solar PV power plant • Maintain health & safety at project site • Work effectively with others S/He with his team of site in-charge and commercial manager, receives differentcomponents of the solar PV power plant (modules, inverter, transformers etc.)procured as per the design, checks the components for specifications and quality,installs the solar PV power plant as per the design, construct the substation and gridinterface incorporating grid code and regulatory provisions incorporated in the design.

15	**Solar PV Maintenance Technician -Electrical (Ground Mount)** **SGJ/Q0115** **Trainee Qualification:** ITI - Electrical andElectronics Minimum Age: 18 **Trainer Qualification:** Graduate with two years of experience in Operation and Maintenance of Solar PV power plant. **Assessor Qualification:** Graduate with three years of experience in Operation and Maintenance of Solar PV power plant.	4	200	**After the training, the candidate would be suitable to work as Solar PV Maintenance Technician for electrical components in a ground mount power plant.**S/He will be trained on and will be able to: • Carry out electrical maintenance of the ground mount solar PV power plant • Maintain personal health & safety at solar PV power plant • Work effectively with others S/He would be able to periodically check and maintain all the electrical components of the solar PV power plant for proper electrical connectivity, incorporating qualitycraftsmanship and complying with all applicable codes, standards, and safetyrequirements.
16	**Solar PV MaintenanceTechnician - Civil (GroundMount)** **SGJ/Q0116** **Trainee Qualification:** 10th pass preferred Minimum Age:18 **Trainer Qualification:** Graduate with two years of experience in Operation and Maintenance of Solar PV power plant. **Assessor Qualification:** Graduate with three years of experience in Operation and Maintenance of Solar PV power plant.	4	200	**After the training, the candidate would be suitable to work as Solar PV Maintenance Technician for civil components in a ground mount power plant.**S/He will be trained on and will be able to: • Carry out civil/ mechanical maintenance of solar PV power plant • Maintain personal health & safety at solar PV power plant • Work effectively with others S/He would be able to periodically checks all the civil / mechanical parts of the solarpower plant for its stability and long life incorporating quality craftsmanship andcomplying with all applicable codes, standards, and safety requirements.

17	**Solar PV O&M Engineer** **SGJ/Q0117** **Trainee Qualification:** Diploma (Electrical/Electronics/ Civil/ Mechanical) or Pre-final engineering and technology candidate with 3 years of formalengineering education+1 year of relevant experience Minimum Age: 20 **Trainer Qualification:** Graduate with one year of experience as certified solar PV O&M Engineer or Graduate with two years of experience in Operation and Maintenance of Solar PV power plant. **Assessor Qualification:** Graduate with two year of experience as certified solar PV O&M Engineer or Graduate with three years of experience in Operation and Maintenance of Solar PV power plant.	5	200	**After the training, the candidate would be suitable to work as Solar PV O&M Engineer. S/He would be able to monitor operation of the Solar PV power plant using SCADA or any other monitoring system.**S/He will be trained on and will be able to: • Operate Solar PV power plant • Carry out electrical maintenance of Solar PV power plant • Carry out civil / mechanical maintenance of Solar PV power plant • Maintain personal health & safety at project site • Work effectively with others S/He would be able to keep watch on voltages at various levels, operational efficiencies of individual components, generation of power; computes performance ratio and compares with simulated values etc. S/He is trained to identify electrical faults from SCADA/any monitoring system and get them rectified in the plant down to modules string level. S/He also trained to maintain civil and mechanical works of the plant through maintenance team.

18	**Solar Off Grid Entrepreneur** **SGJ/Q0118** **Trainee Qualification:** 12th pass preferably Minimum age: 18 **Trainer Qualification:** Graduate+2 years of working experience in Solar off-grid sector **Assessor Qualification:** Graduate+3 years of working experience in Solar off-grid sector And the education qualification can be relaxed in case of extraordinary relevant field experience.	5	200	**After the training, the candidate would be suitable to work as Solar Off Grid Entrepreneur, who does business of solar off grid systems.**S/He will be trained on and will be able to: • Develop solar lighting solutions business • Develop solar PV pumping business • Develop solar PV off – grid power plant business • Entrepreneurship skills • Maintain personal health and safety at project site • Work effectively with others S/he would be able to identify potential market and the client needs / requirementsto propose the right kind of technically and economically feasible Off Grid Solar solution. S/he is well acquainted with Government policies and different suppliers of Off Grid solar solutions like home lighting, lanterns, street lighting, small solar systems and pumps. S/he will be able to select right product from the suppliers and sells them to the customer. S/he would have knowledge of standard installation and maintenance practices for different kinds of Off Grid solar products.

19	**Solar PV Manufacturing Technician SGJ/Q0119** **Trainee Qualification:** 10th pass preferably Minimum Age:18 **Trainer Qualification:** Graduate with two years of work experience in a solar PV module manufacturing plant. **Assessor Qualification:** Graduate with three years of work experience in a solar PV module manufacturing plant. And the education qualification can be relaxed in case of extraordinary relevant field experience	4	200	**After the training, the candidate would be suitable to work as Solar PV Manufacturing Technician. S/He would learn various processes involved in manufacturing of Solar PV Modules.**S/He will be trained on and will be able to: • Carry out the manufacturing of Solar PV Modules • Maintain personal health & safety in a manufacturing facility • Work effectively with others S/He would be able to clean and check front glass cover for the PV module; monitors the process of soldering solar cells to the strings to make interconnect, lamination ofmodules, framing of solar PV module, module testing and packaging for transit.

20	**Solar Lighting Technician (Options: Home Lighting System/ Street Lights) SGJ/Q0201** **Trainee Qualification:** 8th pass preferably Minimum Age:18 **Trainer Qualification:** 10th pass+ ITI or Diploma in technical education withone year of manufacturing solar lighting device or Two years of experience in O&M of solar lighting devices. **Assessor Qualification:** 10th pass+ ITI or Diploma in technical education withtwo year of manufacturing solar lighting device or three years of experience in O&M of solar lighting devices.	4	160	**After the training, the candidate would be suitable to work as Solar Lighting Technician. S/He would assemble, tests and repairs different types of solar photovoltaic (SPV) lamps adhering to basic electricalstandards.**S/He will be trained on and will be able to: • Assembly of different types of solar lamps • Repair of solar lamps • Maintain personal health & safety in a manufacturing facility • Maintain Personal Health and safety at project site **Option1: Home lighting system** Assembly and Repair of solar home lighting systems **Option2: Street light** Assembly and Repair of solar street lights

21	**Solar Domestic Water HeaterTechnician (Option:Manufacturing Technician) SGJ/Q0601** **Trainee Qualification:** 8th pass preferably Minimum Age: 18 **Trainer Qualification:** 10th pass+ ITI or Diploma in technical education withone year of manufacturing solar domestic water heater or two years of experience in O&M of solar domestic water heater. **Assessor Qualification:**10th pass+ ITI or Diploma in technical education with two year of manufacturing solar domestic water heater or three years of experience in O&M of solar domestic water heater.	4	200+ 100 optional	**After the training, the candidate would be suitable to work as Solar Domestic Water Heater Technician. S/He would specialize in the installation, commissioning and maintenance of Solar Water Heaters.** He will be trained on and will be able to: • Carry out installation and commissioning of Solar Water Heater • Carry out maintenance of Solar Water Heater • Maintain personal health & safety at solar thermal project site • Work effectively with others Option: Manufacturing Technician • Carry out manufacturing of Solar Water Heater Tank S/He would be able to install, commission and maintain solar water heater of a desired capacity designed as per the specifications of components such as collectors (PFC/ETC), storage tanks, hot and cold water pipelines, piping for hot water up to the use point, heat exchanger, circulation pumps, controls etc. **Option: Manufacturing Technician**: As an additional skill, manufacturing of Solar Water Heater Tank will be offered as it complements the skills of the technician and helps him in lean periods of seasonal business.

22	**Solar Thermal PlantInstallation & MaintenanceTechnician SGJ/Q0602** **Trainee Qualification:** 10th pass + ITI/Diploma (Civil, Plumbing, Mechanical) Minimum Age: 18 **Trainer Qualification:**10th pass+ITI/Diploma (Civil, Plumbing, Mechanical) + 2 years of relevant experience **Assessor Qualification:**10th pass+ITI/Diploma (Civil, Plumbing, Mechanical) + 3 years of relevant experience	4	280	**After the training, the candidate would be suitable to work as Solar thermal plant installation and maintenance technician. He specializes in the installation, testing, commissioning and maintenance of solar thermal systems.**S/He will be trained on and will be able to: • Carry out Installation, testing and commissioning of solar thermal systems • Carry out maintenance of solar thermal systems • Maintain personal health & safety at solar thermal project site • Work effectively with others S/He would be able to install, test, commission and maintain foundations for mounting structures for the trackers, tracker mounting, reflectors, receivers, heat extracting fluid and the pipes through which it is circulating, fluid circulating pumps, expansion tank, storage tanks, heat exchangers, safety valves etc of the solar thermal system. S/he ensures smooth working of system and early diagnostic and rectification of fault to minimize system dead time.

23	**Solar Thermal Engineer - Industrial Process Heat (Option: Consultant) SGJ/Q0603** **Trainee Qualification:** B.E. / B.Tech (Mechanical /Chemical/ Civil) Minimum Age: 21 **Trainer Qualification:** B.E. / B.Tech (Mechanical /Chemical/ Civil)+ 2 years of experience as Solar Thermal Engineer **Assessor Qualification:** B.E. / B.Tech (Mechanical /Chemical/ Civil)+ 3 years of experience as Solar Thermal Engineer	5	360+ 40 optional	**After the training, the candidate would be suitable to work as Solar Thermal Engineer -Industrial Process Heat. S/He would specialize in utilization,installation and maintenance of Solar Thermal Technologies based systems for supplyof process heat in industry.**S/He will be trained on and will be able to: • Design solar thermal technology solutions for industrial process heatapplications • Ensure installation, testing and commissioning of solar thermal systems • Carry out maintenance of solar thermal systems • Maintain personal health & safety at solar thermal project site • Work effectively with others **Option: Solar Thermal Consultant Industrial Process Heat:** S/He would be able to identify the requirement of heat at desired temperatures fordifferent processes across the industry, identifies the solar thermal technologiescapable of delivering heat at those temperatures with relative efficiencies and cost. S/Hewill be able to survey available open ground/ roof area for installation of solar thermaltechnologies, select the technology, gets system of appropriate capacity installed and integrate with the existing heat source and ensure regular maintenance of the system. S/Hewill bedeveloping entrepreneurship skills for starting and managing new business.

IMPROVED BIOMASS COOKSTOVE				
S. No	**Qualification Pack Title**	**NSQF level**	**Training hours for Trainee**	**Description**
24	**Improved Cook- Stove Installer SGJ/Q2101** **Trainee Qualification:** 5th Pass Preferably Minimum Age: 18 **Trainer Qualification:** High School/Intermediate with 2 years experience in civil/mason work **Assessor Qualification:** High School/Intermediate with 3 years experience in civil/mason work	4	200	**After the training, the candidate would be suitable to work as Improved Cookstove Installer. S/He would specialize in construction of cookstove as per standard mould(s) and installation at appropriate site.**S/He will be trained on: • Collection of Materials and Preparation of Appropriate Mixture • Construction of Improved Cookstove • Installation and Demonstration of Improved Cookstove • Health and Work Safety while Construction and Installation of Improved • Cookstove Entrepreneurship in Installation of Improved Cookstove S/He would be able to select materials, prepare appropriate mixture, construct cookstove as per standard mould(s), embedding non-masonry items, fire for curing, installation at the appropriate site and demonstrate functioning of the Cookstove.

25	**Portable Improved Cookstove Assembler** **SGJ/Q2102** **Trainee Qualification:** 10th Pass Minimum Age: 18 **Trainer Qualification:** 10th Pass+ 2 years of relevant industry experience **Assessor Qualification:** 10th Pass+ 3 years of relevant industry experience	3	200	**After the training, the candidate would be suitable to work as Portable Improved Cookstove Assembler.** S/He will be trained on and will be able to: • Collect Different Parts of Portable Improved Cookstove • Assemble and fit components of Portable Improved Cookstove • Work Safely while Assembling and Fitting of Component S/he assembles and fits various parts of the cookstove to manufacture the final product which meets perfomance and reliability standards. He /She incorporates quality craftsmanship and complies with all applicable standards.

26	**Portable Improved Cookstove Sales and Maintenance Executive** **SGJ/Q2104** **Trainee Qualification**: 8th Pass **Minimum Age**: 18 Years **Trainer Qualification**: 10th Pass + 2 years of experience in any sales and maintenance or similar profile **Assessor Qualification**: 10th Pass + 3 years of experience in any sales and maintenance or similar profile	4	200	**After the training, the candidate would be suitable to work as Portable Improved Cookstove Sales and Maintenance Executive.** After the training, s/he will be trained on: • Identification and Operation of Portable Improved cookstove. • Demonstration and Handling of Sales of Portable Improved Cookstove. • Health and Work Safety while Identification and Demonstration of Portable Improved Cookstove. • Aftersales and Maintenance Services of Portable Improved Cookstoves **Portable improved cookstove sales and maintenance executive is responsible for marketing, selling and aftersales service of cookstove.**

27	**Portable Improved Cookstove Distributor** **SGJ/Q2105** **Trainee Qualification:** 12th Pass +Two years of experience in any distribution or similar operations. **Minimum Age:** 21 years **Trainer Qualification:** 12th pass with four years of experience in any distribution or similar occupation for 12th pass or Graduate with two years of experience in any distribution or similar occupation. **Assessor Qualification:** 12th pass with five years of experience in any distribution or similar occupation for 12th pass or Graduate with three years of experience in any distribution or similar occupation.	6	200	**After the training, the candidate would be suitable to work as Portable Improved Cookstove Distributor.** After the training, s/he will be trained on: • Ensure statutory compliances, laws, policies and procedures • Develop product portfolio • Recruit key personnel for management of operations • Develop demand and distribution channel • Manage overall operations of the business and its expansion • Ensure health and safety in operations **S/He is responsible for increasing market for portable improved cookstoves through vendor selection, warehouse development, logistic and aftersales service support.** S/He develops a portfolio of products, undertakes targeted promotion, and ensures availability of the products to potential customers.

WASTE MANAGEMENT				
S. No	**Qualification Pack Title**	**NSQF level**	**Training hours for Trainee**	**Description**
28	**Recyclable Waste Collector and Segregator** **SGJ/Q6101** **Trainee Qualification:** 5th Pass Preferably Minimum Age:16 **Trainer Qualification:** 10th Pass, Preferably+ Minimum 2 years of relevant industry experience **Assessor Qualification:** 10th Pass, Preferably+ Minimum 3 years of relevant industry experience	4	160	**After the training, the candidate would be suitable to work as Recyclable Waste Collector. S/He would be responsible for collection and proper segregation of Recyclable waste.** S/He will be trained on and will be able to: • Collect Recyclable waste. • Segregate Recyclable waste • Maintain health and work safety. • Entrepreneurship S/He would be able to properly collect, identify different types of waste and segregate at source or at collection center as per recycling / reuse / disposal requirement.

29	**Safai Karamchari (Option: Wet Cleaning/ Mechanized Cleaning) SGJ/Q6102** **Trainee Qualification:** 5th Pass Preferably Minimum Age: 18 **Trainer Qualification:** 10th Pass+ Minimum 2 years of experience in supervising cleaning activity **Assessor Qualification:** 10th Pass+ Minimum 3 years of experience in supervising cleaning activity	3	160	**After the training, the candidate would be suitable to work as Safai Karamchari. S/he would be able to sweeps, cleans and removes garbage from public areas and buildings. S/he would learn about sweeping the floor, scrubs the floor using appropriate cleaning solution to remove the fine dust. S/he would be able to removes the garbage and aggregates the garbage in the designated areas.**S/He will be trained on: • Cleaning of roads, pavements and public areas • Cleaning of floor(s) of buildings • Maintain personal health & safety while cleaning • Work effectively with others while cleaning He would be able to sweep with a broom and / or other suitable equipment to remove dust, debris and garbage. In buildings, s/he will be able to sweep floor, scrub the floor using appropriate cleaning solution to remove the fine dust. **Option1: Wet Cleaning** S/he would specialize in wet cleaning, cleaning and washing bathrooms, lavatory and removing garbage and other waste in closed dustbin. **Option2: Mechanized Cleaning** S/he will specialize in mechanized cleaning sweeps, cleaning and Removing garbage with the help of vacuum cleaner, mechanical sweeper, mechanical sweeper ride and mechanized scrubbing machine.

30	**Waste Picker SGJ/Q6103** **Trainee Qualification:** NA Minimum Age: 18 years **Trainer Qualification:** 10th Pass, Preferably+ Minimum 2 years of relevant industry experience or working in relevant NGO/ Organizations. **Assessor Qualification:** 10th Pass, Preferably+ Minimum 3 years of relevant industry experience or working in relevant NGO/ Organizations.	3	160	**After the training, the candidate would be suitable to work as Waste picker. He / she will be able to collect and recover reusable and recyclable solid waste from the source of waste generation for sale to recyclers directly or through intermediaries to earn his / her livelihood.**S/He will be trained on and will be able to: • Search and collect reusable and recyclable refuse • Preparation and sale of reusable and recyclable refuse • Collection of waste from door-to-door • Maintain personal health and safety S/He would be able to prepare the equipment used for waste collection, identify source of waste generation in local area including the streets, bins, landfills, material recovery facilities, processing and waste disposal facilities. Also identify different color codes used in waste management. As per type of refuse, s/he would suitably modify the collected waste, possibly for a better value.

WASTE MANAGEMENT		
S.NO	**Qualification Pack Details**	**Description**
31	**Animal Waste Manure Aggregator (Option: Biogas Plant Operator Compost Plant Operator) SGJ/Q6302** **NSQF Level : 4** **Course duration/ Training hours : 90** **Trainee Qualification & entry age:** 5th Pass Minimum Age: 18 **Trainer Qualification & Experience:** 10th Pass + Minimum 2 years of relevant experience	After the training, the candidate would be able to work as animal waste manure aggregator. During the training , S/He will be trained to: • Set-up drop points for collecting waste manure • Collect waste manure, hygienically, from designated areas • Appropriately store and dispatch of waste manure • Maintain basic health and workplace safety S/he will be given an option to get training to work as: Biogas Plant Operator, where in S/he will be trained on: • Monitoring, operation and maintenance of biogas plant or Compost Plant Operator, where in S/he will be trained on: • Monitoring, operation and maintenance of compost plant On completion of training and certification, S/he will be able to collect and aggregate animal manure from sources such as animal farms, gaushalas, rural households etc., aggregate supplies, as per the market requirement for various end-uses.

WASTE MANAGEMENT		
S.NO	**Qualification Pack Details**	**Description**
32	**Agri-residue Aggregator SGJ/Q6201** **NSQF Level : 4** **Course duration/ Training hours : 72** **Trainee Qualification & entry age:** 5th Pass Minimum Age: 18 **Trainer Qualification & Experience:** 10th Pass + Minimum 2 years of relevant experience	After the training, the candidate would be able to work as Agri-residue Aggregator. During the training, S/he will be trained to: • Assess demand for agriculture residues and coordinate with farmers • Set up nodal points and procure agri-residues • Densify and store agri-residue bales • Sell and market agri-residue bales • Maintain basic health and workplace safety On completion of training and certification, s/he would be able to appropriately collect agriculture residue from farmers, establish collection points, make assessment of quality and quantity of agriculture residues and accordingly decides price. S/He would be able to appropriately sort, densify and suitably store the bales. S/he would also perform sale of the bales based on end requirements.

WASTE MANAGEMENT		
S.NO	**Qualification Pack Details**	**Description**
33	**Biomass Depot Operator SGJ/Q6207** **NSQF Level : 4** **Course duration/ Training hours : 72** **Trainee Qualification & entry age:** 10th pass Minimum Age: 18 years **Trainer Qualification & Experience:** 12th Pass + Minimum 2 years of relevant experience	After the training, the candidate would be appropriately trained to work as Biomass Depot Operator. S/He will be trained to: • Purchase of agriculture residue biomass from farmers/aggregators for stocking • Re-bale to densify collected agri-residue and standard of further supply • Appropriate storage of bales • Safety of bales and Depot from fir and other hazards • Maintain basic health and workplace safety On completion of training and certification S/he would be appropriately able to handle, store and manage biomass at the storage depot. He/she will suitably undertake activities such as biomass receipt from suppliers, biomass pre-processing/densification and store in a manner so as to ensure its quality and safety from fir and other hazards as per standards.

WASTE MANAGEMENT		
S.NO	**Qualification Pack Details**	**Description**
34	**Manager- Waste Management Elective: Biomass Depot or Compost Yard or Dry Waste Center SGJ/Q6501** **NSQF Level : 6** **Course duration/ Training hours : 6 0 (E:30)** **Trainee Qualification & entry age:** Graduate + minimum two years of experience in the field of waste management Minimum age: 23 years **Trainer Qualification & Experience:** Graduate + minimum four years of experience in the field of waste management	After the training, the candidate would be suitable to work as Manager- Waste Management. S/He will be trained to: • Carry out market analysis • Formulate an operational plan • Ensure compliance with applicable statutory laws, policies and procedures • Ensure health and safety at workplace **Elective 1:** Biomass Depot • Specialize in overall operations of biomass depot and associated business **Elective 2**: Compost Yard • Specialize overall operations of compost yard *and associated business* **Elective 3:** Dry Waste Center • Specialize overall operations of dry waste collection center *and associated business* On completion of training and certification, S/he would be appropriately able to carry out market analysis and formulate the business plan for the center. S/He will be able to manage the overall operation of the center and ensure health and safety at the workplace. S/He would ensure compliance of applicable statutory laws, policies and procedures relating to the center.

WASTEWATER TREATMENT		
S.NO	**Qualification Pack Details**	**Description**
35	**Wastewater treatment plant technician SGJ/Q6601** **NSQF Level : 4** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** 12th Pass, 10th Pass + ITI/Diploma, 8th pass + 4 years of experience as Wastewater Treatment Plant Helper Minimum Age:18 Years **Trainer Qualification & Experience:** ITI /Diploma + 3 years of relevant industry experience or B.Tech. + 2 Years of relevant industry experience or Certified Wastewater Treatment Plant technician + 2 years of relevant experience (education qualification can be relaxed in case of extraordinary relevant experience)	After the training, the candidate would be suitable to work as Wastewater Treatment Plant Technician. S/He would specialize in operation & maintenance of the Industrial and Housing Societies Wastewater Treatment Plants. S/He will be trained on and will be able to: • Operate the Wastewater Treatment Plant • Monitor and Maintain Wastewater Treatment Plant • Work Safety at Wastewater Treatment Plant. S/He would be able to operate Wastewater Treatment Plant and other related equipment. S/He would be able to perform the operation and cleaning of different screens, valves in a Wastewater Treatment Plant and charge the slurry tank. S/He would be able to do add desired quantity of chemicals and microbes to treat water. S/He would also facilitate the calibration of process control equipment as needed.

WASTEWATER TREATMENT		
S.NO	**Qualification Pack Details**	**Description**
36	**Wastewater treatment plant Helper SGJ/Q6602** **NSQF Level : 3** **Course duration/ Training hours : 160** **Trainee Qualification & entry age:** 8th Pass Minimum Age: 18 **Trainer Qualification & Experience:** ITI /Diploma + 3 years of relevant industry experience or B.Tech. + 2 Years of relevant industry experience or Certified Wastewater Treatment Plant technician + 2 years of relevant experience (education qualification can be relaxed in case of extraordinary relevant field experience)	After the training, the candidate would be suitable to work as Wastewater Treatment Plant Helper. S/He would assist in Operation and Maintenance of Industrial and Housing Societies Wastewater Treatment Plant. S/He will be trained to: • Maintain the Wastewater Treatment Plant. • Assist the Supervisor in Wastewater Treatment Plant • Work Safety at Wastewater Treatment Plant. S/He would be able to help in operation of Wastewater Treatment Plant and other related equipment. S/He would be able to measure and record all meter and gauge readings, perform maintenance on filters and valves, Cleaning of Tanks, cleaning of work area and equipment.

WASTEWATER TREATMENT		
S.NO	**Qualification Pack Details**	**Description**
37	**Septic Tank Technician SGJ/Q6402** **NSQF Level : 4** **Course duration/ Training hours : 220** **Trainee Qualification & entry age:** 5th Pass with minimum experience of 3 years in masonry work Minimum Age: 19 **Trainer Qualification & Experience:** 10th pass + 2 years experience in supervising masons for installation of septic tank.	After the training, the candidate would be suitable to work as Septic Tank Technician and will be trained to carry out the following activities: • Assessment of site and size of septic tank / soak pit • Excavation, fabrication and installation of septic tank / soak pit • Installation of prefabricated septic tank • Repair and maintenance of septic tank /soak pit • Maintain personal health & safety in FSSM • Work effectively with co-workers S/He would be able to fabricate different types of septic tanks/ soak pit and install fixed as well as prefabricated septic tank at the site (commercial/institutional /residential). S/He would assess the site and decide suitable design and size of the septic tanks as per client requirement. S/He would execute its fabrication including that of prefabricated septic tank with fellow masons. S/He would also undertake the work of repair and maintenance of existing septic tanks.

WASTEWATER TREATMENT		
S.NO	**Qualification Pack Details**	**Description**
38	**Desludging Operator SGJ/Q6403** **NSQF Level : 4** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** 5th Pass Minimum Age: 18 **Trainer Qualification & Experience:** 10th pass + 2 years experience in waste management or sanitation sector	After the training, the candidate would be suitable to work as Desludging Operator and will be trained to carry out the following activities: • Emptying of septic tank • Preventive maintenance, transportation and safe disposal of sludge • Health and safety of workplace while doing desludging services • Work effectively with co-worker • Entrepreneurship skills for FSSM services S/He would be able to empty, transport and dispose faecal sludge from the septic tank to desludging site / FSTP / Co-treatment plant. He /She will be able to operate Sludge Vacuum tank with trucks, pumps, suction hoses, and other machinery/equipment to empty the septic tank. He / She is an individual having ability to venture into desludging services for managing Faecal Sludge.

WASTEWATER TREATMENT		
S.NO	**Qualification Pack Details**	**Description**
39	**Faecal Sludge Treatment Plant O&M Technician SGJ/Q6404** **NSQF Level : 4** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** ITI or equivalent Minimum Age: 18 **Trainer Qualification & Experience:** ITI /Diploma + 3 years of relevant industry experience	After the training, the candidate would be suitable to work as Faecal Sludge Treatment Plant O&M Technician and will be trained to carry out the following activities: • Carry out operation of FSTP • Carry out routine maintenance of FSTP • Maintain personal health & safety in FSSM • Work effectively with co-workers S/He would be able to carry out the operation and maintenance of Faecal Sludge Treatment Plant (FSTP). S/he will be able to carry out the day-to-day technical operations of the plant. S/He will be able to carry out the repair and maintenance of pumps, engines, motors, filters, bar screens, valves, pipes, and any other equipment at the FSTP

WIND ENERGY		
S.NO	**Qualification Pack Details**	**Description**
40	**Assistant Planning Engineer – Wind Power Plant SGJ/Q1201** **NSQF Level : 4** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** ITI / Diploma (Electrical, Mechanical, Civil) Minimum Age:18 Years **Trainer Qualification & Experience:** ITI/Diploma + 4 years of relevant industry experience or B.Tech./B.E. + 3 years of relevant industry experience	After the training, the candidate would be suitable to work as Assistant Planning Engineer – Wind Power Plant. S/He will be trained to: • Assist in project planning for wind power plant • Assist in project evaluation and monitoring for wind power plant • Perform basic health and safety practices at project site (Ground and Height) • Work effectively with others S/He would carry out planning of workflow for turbines & electrical system's Erection & Commissioning (E&C), conduct statistical studies of product quality and time usage and analyse production costs and complying with all operational manuals, applicable codes, standards and safety requirements.

WIND ENERGY		
S.NO	**Qualification Pack Details**	**Description**
41	**Site Surveyor-Wind Power Plant SGJ/Q1202** **NSQF Level : 6** **Course duration/ Training hours : 120** **Trainee Qualification & entry age:** B.E. / B. Tech. (Electrical/ Mechanical/ Civil/ Electronics and Communication / Electrical and Electronics/ Control & Instrumentation) Minimum Age:21 Years **Trainer Qualification & Experience:** B.E/B. Tech (Electrical/ Mechanical/ Civil/ Electronics and Communication / Electrical and Electronics/ Control & Instrumentation) + 5 years of relevant industry experience or M.E/M.Tech. (Electrical, Electronics, Instrumentation, Renewable Energy) + 3 years of relevant industry experience	After the training, the candidate would be suitable to work as Site Surveyor - Wind Power Plant. S/He will be trained to: • Conduct site survey for wind power plant • Perform basic health and safety practices at project site (Ground and Height) • Work effectively with others S/He carries out site inspection, site assessment, checking site access, approach roads, grid availability for power evacuation, substation availability & its capacity and other relevant proximity of site.

WIND ENERGY		
S.NO	**Qualification Pack Details**	**Description**
42	**Construction Technician (Mechanical) - Wind Power Plant SGJ/Q1401** **NSQF Level : 4** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** 12th pass, preferably Minimum Age:18 Years **Trainer Qualification & Experience:** ITI/Diploma + 3 years of relevant industry experience or B.Tech./B.E. + 2 years of relevant industry experience	After the training, the candidate would be suitable to work as Construction Technician (Mechanical) - Wind Power Plant. S/He will be trained to: • Carry out the installation of mechanical components of wind power plant • Perform testing and commissioning of mechanical components of wind power plant • Perform basic health and safety practices at project site • Work effectively with others S/He would carry out installation, testing, erection & commissioning of all mechanical parts & components of wind power plant including WTG, transformer, blades, nacelle, junction boxes and other associated accessories as per design drawing.

WIND ENERGY		
S.NO	**Qualification Pack Details**	**Description**
43	**Construction Technician (Civil) - Wind Power Plant SGJ/Q1402** **NSQF Level : 4** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** 12th pass, preferably Minimum Age:18 Years **Trainer Qualification & Experience:** ITI/Diploma + 3 years of relevant industry experience or B.Tech./B.E. + 2 years of relevant industry experience	After the training, the candidate would be suitable to work as Construction Technician (Civil) - Wind Power Plant. S/He will be trained to: • Carry out installation of civil components of wind power plant • Perform basic health and safety practices at project site (Ground and Height) • Work effectively with others S/He would undertake site labelling, tower foundation, transformer foundation, switchyard & switchgear foundation and control room building foundation as per design drawing and preparation of approach road to the site.

WIND ENERGY		
S.NO	**Qualification Pack Details**	**Description**
44	**Construction Technician (Electrical) - Wind Power Plant SGJ/Q1403** **NSQF Level : 4** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** 12th pass, preferably Minimum Age:18 Years **Trainer Qualification & Experience:** ITI/Diploma + 3 years of relevant industry experience or B.Tech./B.E. + 2 years of relevant industry experience	After the training, the candidate would be suitable to work as Construction Technician (Electrical) - Wind Power Plant. S/He will be trained to: • Carry out installation of electrical components of wind power plant • Perform testing and commissioning of electrical components of wind power plant • Perform basic health and safety practices at Project Site (Ground and Height) • Work effectively with others S/He would carry out installation, testing & commissioning of wind power plant including WTG, transformer, poles, O/H line, U/G cables, junction boxes, feeder pillars and other associated accessories like CMS with applicable codes, standards, and safety requirements.

WIND ENERGY		
S.NO	**Qualification Pack Details**	**Description**
45	**CMS Engineer- Wind Power Plant SGJ/Q1501** **NSQF Level : 5** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** B. Tech (Electrical, Electronics) Minimum Age:20 Years **Trainer Qualification & Experience:** B.E/B. Tech (Electrical, Electronics) + 3 years of relevant industry experience or M.E/M. Tech. (Electrical, Electronics, Instrumentation, Renewable Energy) + 1 year of relevant industry experience (education qualification can be relaxed in case of extraordinary relevant field experience)	After the training, the candidate would be suitable to work as CMS Engineer- Wind Power Plant. S/He would be responsible for carrying out installation and commissioning of Condition Monitoring System (CMS) of the wind power plant. S/He will be trained to: • Carry out installation and commissioning of Condition Monitoring System of Wind Power Plant • Operate and Maintain CMS of Wind Power Plant • Perform basic health and safety practices at Project site (Ground and Height) • Work effectively with others S/he would further, plan and monitor the operation and maintenance of the CMS with a continuous stream of system data, mostly based on vibration monitoring and other operating conditions.

WIND ENERGY		
S.NO	**Qualification Pack Details**	**Description**
46	**O&M Mechanical Technician – Wind Power Plant SGJ/Q1502** **NSQF Level : 4** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** 12th pass, preferably Minimum Age:18 Years **Trainer Qualification & Experience:** ITI/Diploma + 3 years of relevant industry experience or B.Tech./B.E. + 2 years of relevant industry experience	After the training, the candidate would be suitable to work as O&M Mechanical Technician –Wind Power Plant. S/He will be trained to: • Carry out operation of mechanical components of wind power plant • Carry out maintenance of mechanical components of wind power plant • Perform basic health and safety practices at project site (Ground and Height) • Work effectively with others S/He would carry out operations and maintenance of mechanical components of wind power plant, complying with all operational manuals, applicable codes, standards, and safety requirements.

WIND ENERGY		
S.NO	**Qualification Pack Details**	**Description**
47	**O&M Electrical & Instrumentation Technician – Wind Power Plant SGJ/Q1503** **NSQF Level : 4** **Course duration/ Training hours : 200** **Trainee Qualification & entry age:** 12th pass, preferably Minimum Age:18 Years **Trainer Qualification & Experience:** ITI/Diploma + 3 years of relevant industry experience or B.Tech./B.E. + 2 years of relevant industry experience	After the training, the candidate would be suitable to work as O&M Electrical & Instrumentation –Wind Power Plant. S/He would inspect, diagnose, troubleshoot and repair electrical & instrumentation systems of wind power plant. S/He will be trained to: • Carry out operation of electrical & instrumentation systems of wind power plant • Carry out maintenance of electrical & instrumentation systems of wind power plant • Perform basic health and safety practices at project site (Ground and Height) • Work effectively with others S/he is expected to perform operation and maintenance of switchgear, transformer, O/H and U/G Lines, SCADA, communication system (Fibre Optics) and complying with all operational manuals, applicable codes/standards, and safety requirements.

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