GREEN JOBS

NEWSLETTER

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Inside this Edition

From the CEO's Desk

The accelerating transition toward a sustainable, low-carbon economy is fundamentally reshaping industries, labour markets, and skill requirements worldwide. In this context, the role of the Skill Council for Green Jobs (SCGJ) assumes heightened strategic importance, as the nation advances toward its climate commitments, energy transition goals, and inclusive development objectives.

During the period under review, SCGJ has continued to consolidate its position as a pivotal institutional bridge between policy, industry, and the skilling ecosystem. Our focus has been directed toward the systematic development and upgradation of occupational standards, qualification frameworks, and training curricula across key green sectors, including renewable energy, electric mobility, waste management, sustainable construction, and allied emerging domains. These interventions are firmly grounded in industry demand, technological evolution, and evolving regulatory and policy imperatives.

Quality, relevance, and impact remain central to our approach. Through deeper engagement with industry partners, training institutions, and state and national stakeholders, we are working to ensure that skill development initiatives translate into tangible employment outcomes, enhanced productivity, and long-term workforce resilience. In parallel, SCGJ continues to strengthen its monitoring and governance mechanisms by leveraging digital platforms, data-driven insights, and continuous feedback loops to improve transparency, accountability, and performance across the skilling value chain.

As India intensifies its efforts toward climate resilience and long-term net-zero ambitions, the strategic importance of a skilled green workforce cannot be overstated. SCGJ remains steadfast in its commitment to enabling this transition by building robust, future-ready skill ecosystems that empower youth, support industry competitiveness, and contribute meaningfully to sustainable economic growth.

I extend my sincere appreciation to our partners, stakeholders, and teams for their unwavering collaboration and dedication. Together, we will continue to advance the shared mission of preparing India's workforce for a greener, more resilient, and more prosperous future.

Arpit Sharma
CEO
Skill Council for Green Jobs

SKILL-BASED EDUCATION: THE BACKBONE OF A THRIVING GREEN ECONOMY

- Arpit Sharma, CEO

The 21st-century global economy is undergoing a profound transformation—one increasingly driven by sustainability. From renewable energy and electric mobility to green hydrogen and circular industrial systems, the rise of the green economy marks a decisive shift toward decoupling economic growth from environmental degradation.

However, while clean technologies are advancing at an unprecedented pace, one critical enabler is lagging behind: human capital.

For the green economy to scale successfully, the focus cannot remain limited to engineers, researchers, and policymakers alone. Equally essential are skilled technicians, hands-on professionals, and operational innovators who can deploy, operate, maintain, and optimize green technologies in real-world conditions. This is where skill-based education becomes the cornerstone of a just, inclusive, and effective green transition.

Why Traditional Education Alone Is Insufficient

Academic education plays a vital role in building conceptual understanding. However, by itself, it often falls short of preparing learners for green jobs that demand operational readiness and applied expertise. Key limitations include:

- Limited practical exposure: Many graduates complete their education without hands-on experience with solar systems, EV powertrains, electrolyzers, or battery testing equipment.
- Lack of interdisciplinary integration: Green technologies combine electrical, mechanical, environmental, digital, and safety domains, which are rarely taught in an integrated manner.
- Slow curriculum updates: By the time new syllabi are implemented, technologies and industry practices have already evolved.
- Minimal industry immersion: Internships, certifications, and live industry projects remain the exception rather than the norm.

As a result, graduates may understand how hydrogen is produced, but not how to safely operate an electrolyzer. They may learn about microgrids in theory, yet lack the ability to configure, commission, or troubleshoot one in practice. Skill-based education bridges this critical gap.

What Is Skill-Based Education?

Skill-based education prioritizes practical competence aligned with industry requirements. Its core principles include:

- Competency-based learning rather than content-heavy instruction
- Learning by doing, instead of passive memorization
- Industry-recognized certification pathways
- Workplace readiness through training in tools, safety, diagnostics, and troubleshooting

- Live projects, simulations, and real-system exposure

In the context of the green economy, skill-based education translates into hands-on training environments where learners can:

- Install and test solar inverters under real load conditions
- Conduct charge–discharge cycles and diagnostics on battery systems
- Operate fuel cells and monitor gas flow and safety parameters
- Calibrate sensors and controllers in EV platforms
- Design and commission microgrids integrating renewables and energy storage

This is where theoretical knowledge is transformed into actionable capability.

Why Skill-Based Education Is Critical to the Green Transition

1. Bridging the Workforce Gap

According to the International Renewable Energy Agency (IRENA), the renewable energy sector alone could generate up to 38 million jobs globally by 2030. India's electric mobility and clean energy missions similarly project large-scale employment opportunities. However, these roles require job-ready talent, not just degree holders.

Skill-based education ensures graduates enter the workforce with the confidence and technical proficiency needed to contribute from day one.

2. Accelerating Technology Deployment

One of the most common barriers to scaling green technologies is the shortage of trained personnel to install, maintain, and troubleshoot systems. From rooftop solar installations to EV charging infrastructure and hydrogen systems, inadequate skills often lead to poor implementation, system failures, and reduced trust.

Well-trained technicians become critical enablers—ensuring quality, reliability, safety, and long-term system performance.

3. Strengthening Local and Regional Economies

Skill-based programs can be tailored to regional needs—such as solar irrigation systems in agricultural regions or microgrids in remote and underserved areas. This localized approach generates employment within communities, reduces dependence on external expertise, and supports inclusive economic development.

4. Fostering Innovation and Entrepreneurship

When learners understand both the principles and practical realities of green technologies, they are better positioned to identify real-world challenges and develop solutions. This nur-

tures grassroots innovation and supports the growth of green startups, service enterprises, and decentralized maintenance ecosystems.

The Road Ahead: Building a Skilled Green Workforce

The transition to a green economy is not merely a shift in energy sources—it is a transformation of education, workforce development, and opportunity. Sustainable development depends as much on people and skills as it does on technology and policy.

To build a future-ready green workforce, governments, industries, and academic institutions must collaborate to make skill-based education a central pillar of climate action and economic growth. Key priorities include:

- Establishing Centers of Excellence for Green Skills
- Continuously updating curricula to reflect emerging clean technologies
- Expanding apprenticeships, simulations, and hands-on learning models
- Certifying skills through nationally and internationally recognized standards
- Investing in modern, future-ready training infrastructure

Conclusion

The green economy represents the future—but it will not build itself. It requires not only analysts and designers, but also electricians who can install systems, mechanics who can maintain them, and technicians who can adapt to evolving technologies.

Skill-based education ensures that sustainability moves beyond laboratories and policy documents into real-world implementation. It empowers youth, strengthens employment outcomes, and ensures that the transition to clean energy is not only achievable—but enduring.

COP30: Detailed Summary of Outcomes

COP30, the 30th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), was held in Belém, Brazil, from 10 to 21 November 2025. The summit concluded with a set of negotiated decisions and political outcomes that reflect both advances and limitations in global climate action. The following summary is prepared in a neutral, factual style aligned with encyclopedic presentation based on verified sources.

Overview

COP30 was convened as part of the annual UNFCCC process and took place a decade after the adoption of the Paris Agreement. Its stated aim was to shift from high-level commitments toward implementation of climate action, building on the first Global Stocktake and prior COP outcomes. The summit brought together Parties to the UNFCCC, representatives of intergovernmental and non-governmental organizations, scientific experts, private sector observers, and civil society participants.

Key Outcomes of COP30

1. Political Package and Decisions

The COP30 Presidency and Parties adopted a main negotiating outcome often referred to as the Belém Political Package or the “Mutirão decision” (Decision FCCC/PA/CMA/2025/L.24). This set of decisions reaffirmed collective commitments and set directions for implementation across multiple thematic areas: mitigation, adaptation, climate finance, loss and damage, transparency, and support for developing countries.

Selected highlights from the Belém Political Package include:

Reaffirmation of urgent action to limit global warming to 1.5 °C and rapid, sustained emissions reductions, including achieving net zero carbon dioxide emissions by 2050. A call to upscale

climate finance for developing countries, emphasizing public and concessional support, particularly for adaptation and resilience.

- Recognition of the need for enhanced action and support to avert, minimize, and address loss and damage associated with climate impacts.
- Decisions mandating further work on climate finance architecture, including a two-year work programme on convening high-level dialogues on implementation of Paris Agreement finance obligations.
- The package also includes multiple detailed outputs from the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA), addressing guidance to financial mechanisms, adaptation frameworks, technology implementation, and reporting support.

2. Adaptation and Resilience

COP30 developed a set of Global Goal on Adaptation (GGA) indicator**s**—a framework of 59 indicators intended to support assessment of adaptation progress. These indicators were agreed with compromises, reflecting the complex negotiations around measurable adaptation outcomes.

Parties also agreed politically to triple adaptation finance by 2035, signalling a significant scaling of financial support to increase resilience in vulnerable countries. However, detailed baselines and clear allocation responsibilities were not fully defined, and finance gaps remain a concern for many developing Parties.

3. Climate Finance

A core outcome of COP30 was strengthened ambition on climate finance, building on the existing Baku to Belém Roadmap toward mobilizing increased support. Parties:

- Endorsed the continued trajectory toward at least USD 1.3 trillion per year in combined public and private climate finance for developing countries by 2035.
- Reaffirmed the need for predictable, grant-based, and highly concessional resources, particularly for adaptation.
- Additionally, COP30 established institutional arrangements to enhance reporting, coordination, and delivery functions of multilateral climate funds and collaborative platforms.

4. Loss and Damage

The summit reinforced global resolve to support vulnerable countries facing irreversible climate impacts by emphasizing enhanced action and support for loss and damage. Decisions encouraged more predictable and scaled financing, aligning with ongoing efforts around the Loss and Damage **Fund** and other mechanisms.

5. Mitigation and Energy Transition

COP30 did not produce a legally binding roadmap to phase out fossil fuels or a global emissions cap mechanism in the final negotiated text. While voluntary plans and initiatives (e.g., on carbon markets and fossil fuel transition frameworks) were discussed, these did not translate into formal adopted obligations within the Belém Political Package. This omission was noted by negotiators and observers as a key shortcoming relative to scientific urgency.

6. Nationally Determined Contributions (NDCs)

By the end of COP30, over 120 Parties had submitted updated or enhanced NDCs covering a majority of global emissions, reflecting ongoing national engagement with Paris Agreement cycles. These updated plans are intended to provide clearer pathways for emissions reductions, although aggregate ambition still falls short of meeting the 1.5 °C target.

7. Civil Society, Indigenous Peoples, and Just Transition

COP30 featured one of the largest presences of Indigenous Peoples and civil society in COP history, and Parties agreed to strengthen capacities and participation. A new Just Transition Mechanism or framework—often referred to in ancillary political outcomes—was introduced to support equitable socio-economic transitions, including references to labour rights and human rights.

Assessment and Reception

Post-summit analyses describe COP30 as a mixed outcome:

- It reaffirmed global cooperation and advanced implementation structures for finance, adaptation, and transparency.
- It failed to secure a formal fossil fuel phase-out roadmap and did not close key ambition gaps on mitigation, drawing criticism from several experts and civil society groups.
- Strengthened adaptation frameworks and financial commitments were welcomed, but gaps in specific obligations and clarity on funding flows persist.

Legacy and Forward Path

COP30's negotiated outcomes—particularly on finance, adaptation indicators, and implementation mechanisms—are intended to shape subsequent negotiations and operational work through technical bodies and intersessional processes leading to **COP31** and beyond. Parties are expected to build on the Belém outcomes to enhance ambition, delivery, and accountability in the next cycle of climate action.

India’s Role

At the 30th Conference of the Parties (COP30) to the UN Framework Convention on Climate Change, held in Belém, Brazil, in November 2025, India positioned itself as a leading advocate for climate equity, multilateralism, and development-aligned climate action.

India’s interventions emphasized the principles of equity and Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC), arguing that countries with higher historical emissions should assume a greater share of mitigation and finance obligations. A central priority was climate finance, which India reaffirmed as a legal obligation of developed countries under the Paris Agreement, with particular emphasis on scaling up adaptation finance for vulnerable regions.

India supported progress on the Global Goal on Adaptation and welcomed discussions on a Just Transition framework, while cautioning against unilateral trade-related climate measures that could restrict development space for emerging economies. Acting both independently and through coalitions such as BASIC and Like-Minded Developing Countries, India reinforced the need for affordable access to climate technologies and balanced pathways that integrate climate action with poverty reduction and economic growth.

Overall, India’s role at COP30 reflected its broader climate diplomacy: constructive engagement, strong advocacy for the Global South, and a consistent focus on fairness, finance, and implementation.

SCGJ Statstics

Through industry-aligned standards, training, and certification, SCGJ has enabled large-scale skilling and continues to strengthen India's clean energy and green economy transition.

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INDIA'S TRAINING & ASSESSMENT LEADERS

166,372 TOTAL CANDIDATES ASSESSED

A nationwide total of individuals participated in the training and assessment programs.

RAJASTHAN DOMINATES WITH OVER **52%** OF ALL PARTICIPANTS

Rajasthan:

86,975

The state is the clear leader, accounting for more than half of all candidates.

Assam: **19,717**

Uttar Pradesh: **11,721**

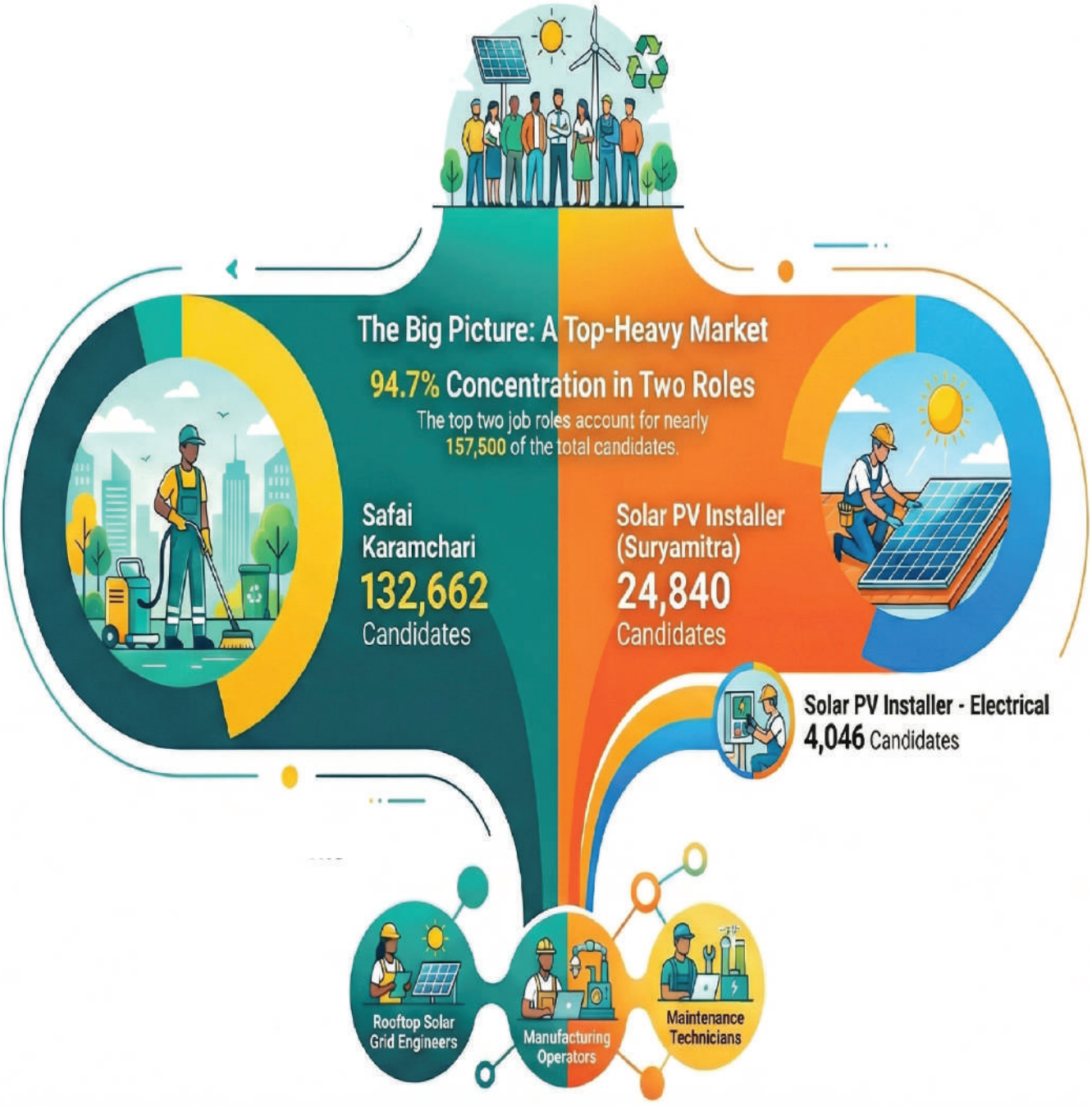
TOP 3 STATES COMPRISE **71%** OF PARTICIPANTS

Rajasthan,Assam and Uttar Pradesh represent the vast majority of program Participants.

A breakdown of Green Job Roles

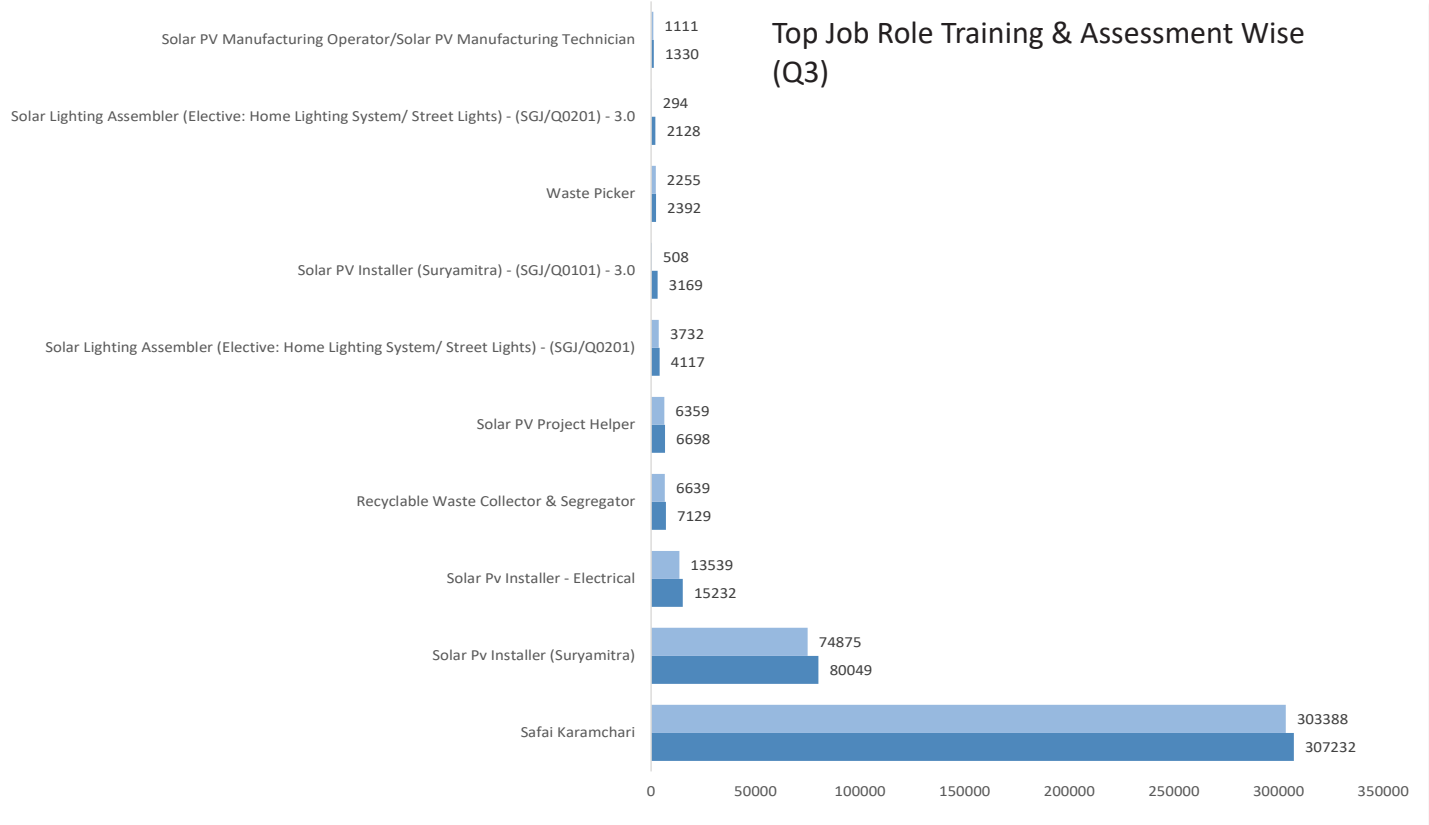
166,372 Total Candidate

Seeking roles in Green energy & Allied Sector




Powering the Future: A Snapshot of Green Job Training *
MASS-SCALE SKILLING PROGRAMS
OVER
427,000
Candidates trained as Safai Karamcharis (Sanitation Workers)
Represents the largest single cohort in the green skills initiative.
OVER
110,000
'Suryamitras' trained for Solar PV Installation
Demonstrates a massive national push towards solar energy skills.
NEARLY
20,000
Candidates trained as Solar PV Electrical Installers
Specialized role complements the broader Suryamitra program.
THE DIVERSE GREEN ECONOMY
Waste management
Waste management is a major employment area.
Recyclable Waste Collectors
8,812
Waste Pickers
3,764
Wind and Hydro power
Wind and Hydro power show targeted skill development.
Over
1,300
technicians trained for Wind Power Plant O&M
SPECIALIZED & EMERGING ROLES
Solar
Rooftop Solar Photovoltaic Entrepreneur
1387
Wind
O&M Mechanical Technician-Wind Power Plant
657
Waste
Manager-Waste Management
187
Hydrogen
Green Hydrogen Plant Technician
84

* Since 2015


Top Job Role Training & Assessment Wise (Q3)
Solar PV Manufacturing Operator/Solar PV Manufacturing Technician
1111
1330
Solar Lighting Assembler (Elective: Home Lighting System/ Street Lights) - (SGJ/Q0201) - 3.0
294
2128
Waste Picker
2255
2392
Solar PV Installer (Suryamitra) - (SGJ/Q0101) - 3.0
508
3169
Solar Lighting Assembler (Elective: Home Lighting System/ Street Lights) - (SGJ/Q0201)
3732
4117
Solar PV Project Helper
6359
6698
Recyclable Waste Collector & Segregator
6639
7129
Solar Pv Installer - Electrical
13539
15232
Solar Pv Installer (Suryamitra)
74875
80049
Safai Karamchari
303388
307232
0
50000
100000
150000
200000
250000
300000
350000

Skill Development Overview *

Job Role	Total Candidate
Safai Karamchari	307498
Solar Pv Installer (Suryamitra)	83218
Solar Pv Installer - Electrical	15801
Solar PV Project Helper	7439
Recyclable Waste Collector & Segregator	7129
Solar Lighting Assembler	6314
Waste Picker	2392
Solar PV Manufacturing Operator/Solar PV Manufacturing Technician	1330
Solar PV Designer - (SGJ/Q0110)	1209
Solar Photovoltaic Entrepreneur - (SGJ/Q0901) - 2.0	1151
Rooftop Solar Grid Engineer	1116
Rooftop Solar Photovoltaic Entrepreneur/Solar Photovoltaic Entrepreneur	1105
Agri-residue Aggregator	1068
Solar PV Installer - Civil	1068
Solar electric System Installer & Service Provider-RNE701	861
Wastewater Treatment Plant Technician	851
Solar PV Maintenance Technician - Electrical (Ground Mount) - (SGJ/Q0115) - 3.0	736
O&M Mechanical Technician-Wind Power Plant	601
O&M Electrical & Instrumentation Technician- Wind Power Plant	600
Solar Proposal Evaluation Specialist	436
Desludging Operator - (SGJ/Q6403) - 2.0	420
Small Hydro Power Plant Technician-(Jal Urja Mitra)	417
Junior Technician- Solar EV charging station - (SGJ/Q4001)	391
Green Hydrogen Plant Entrepreneur	382
Solar PV Maintenance Technician - Civil (Ground Mount)	366
Wind Resource Assessor and Site Surveyor - Wind Power Plant	337
Wastewater Treatment Plant Helper	330
Improved Cookstove Installer	275
Biomass Depot Operator	210
Solar EV Charging Entrepreneur - (SGJ/Q1801)-v1.0	197
Junior Technician- Solar Cold Storage - (SGJ/Q4002) - 1.0	181
Solar PV Engineer	126
Solar PV Business Development Executive	102
Manager- Waste Management	91
Solar Cold Storage Entrepreneur - (SGJ/Q1802) - 1.0	91
Paper Bag Maker- Micro Entrepreneur	84
Solar PV Manufacturing Technician - (SGJ/Q0119) - 3.0	72
Solar PV Technician-RNE805	70
Solar PV O&M Engineer	61
GHG Accounting and Sustainability Reporting - (SGJ/MCr-0001)-v1.0	41
Solar Domestic Water Heater Technician	40
Solar PV Project Manager (E&C) - (SGJ/Q0114) - 3.0	40
Technician - Paper Bag Manufacturing	27
Solar Hot Water system installer (Domestic system upto 2000L)- including servicing RNE702	20
Portable Improved Cookstove Distributor/Clean cookstove Distributor	3
Grand Total	446356

* Q1+Q2+Q3 (April 2024-December 2025)

SCGJ Events

SCGJ organizes and participates in key conferences, workshops, and stakeholder consultations to promote green skills development. These events facilitate industry engagement, policy dialogue, and capacity building, supporting workforce readiness for India's clean energy and sustainability sectors.

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Constitution Day Celebration

On the occasion of Constitution Day of India, observed on 26 November 2025, the Skill Council for Green Jobs (SCGJ) organized a series of activities to commemorate the spirit of the Indian Constitution and to foster awareness of its core values among stakeholders. A central feature of the observance was the Slogan Writing Competition on the Constitution of India, designed to encourage participants to articulate their reflections on constitutional ideals, national identity, and democratic responsibility through creative expression. Following a transparent and rigorous evaluation process, the judging panel shortlisted the top three slogans:

1. *"संविधान की शक्ति! लोकतंत्र की भक्ति!"*
2. *"Heroes gave us freedom; the Constitution teaches us how to protect it."*
3. *"हम भारतीयों का संविधान, रक्षा करनी है हमें इसकी आन, और बढ़ाना है इसका अभिमान।"*

These entries were commended for their originality, clarity of expression, and the strong patriotic and constitutional ethos they conveyed. The winning entry will be formally recognized and awarded in acknowledgment of its spirited contribution.

The programme concluded with a reflective and interactive "Chai pe Charcha" session, during which team members shared perspectives on the relevance of constitutional values in everyday life and professional conduct. The observance reaffirmed SCGJ's commitment to upholding the foundational ideals of justice, liberty, equality, and fraternity, and to contributing meaningfully to the nation's democratic and sustainable development.

Winner
Girish Balasubramanyam

Pledge to the Constitution of India

On the occasion of Constitution Day of India, observed on 26 November 2025, the Skill Council for Green Jobs (SCGJ) team collectively participated in the Pledge to the Constitution of India, reaffirming its unwavering commitment to the fundamental values of justice, liberty, equality, and fraternity.

The pledge ceremony brought together members of the SCGJ fraternity in a shared expression of civic responsibility, fostering a heightened sense of duty, national pride, and ethical accountability. It served as a solemn reminder of the responsibilities entrusted to citizens under the Constitution and reinforced the resolve to uphold constitutional principles in both professional practice and personal conduct. The gathering reflected unity, integrity, and a collective dedication to the ideals that underpin India's democratic framework.
SCGJ continues to remain steadfast in its commitment to promoting awareness of constitutional values and to contributing constructively to the broader process of nation-building.

SCGJ at DIDAC SKILL 2025

The Skill Council for Green Jobs (SCGJ) had an enriching and impactful participation at DIDAC Skills 2025. Throughout the event, the SCGJ team engaged with a diverse range of stakeholders, including institutes, schools, and educators who are actively shaping the future of learning and skill development. The team also had the privilege of interacting with international delegates and experts from Australia, Finland, and Germany, enabling a meaningful exchange of perspectives on global best practices, green skill development, and emerging opportunities within the sustainability and green sectors. The event served as a valuable platform for collaboration and knowledge sharing, while also facilitating discussions on innovative training approaches and new methodologies aimed at empowering the workforce of tomorrow. Overall, it was a highly inspiring experience and a well-organized event. SCGJ looks forward to building on the meaningful connections established during the event and to continuing its contribution toward a greener and more skilled future. The council extends its sincere appreciation to DIDAC India and DIDAC Skills for providing this excellent opportunity, and thanks all the institutions that expressed interest in SCGJ's work. SCGJ looks forward to continued engagement and collaboration in the future.

Season 5: Solar Premier League

Empowering Skills, Celebrating Excellence

Skill Council for Green Jobs (SCGJ) is pleased to have supported Solar Premier League – Season 5, a forward-looking initiative organized by Solar is My Passion with the support of the Ministry of New and Renewable Energy (MNRE). The season represented a significant milestone in India's solar skilling landscape, not only by showcasing the advanced technical competencies of solar professionals from across the country, but also by actively promoting women's participation in the solar workforce—underscoring the increasing inclusivity of India's renewable energy ecosystem.

Ms. Sangeeta Patra, Senior Vice President and Head – Apprenticeship Operations, CSR, Partnerships, and Marketing at SCGJ, graced the Prize Distribution Ceremony and felicitated the winners in recognition of their exemplary performance and professional excellence. Mr. Raushan Kumar, Deputy Manager, SCGJ, contributed to the event as a Judge, ensuring rigorous adherence to industry-aligned technical benchmarks and safety standards.

At SCGJ, we firmly believe that the long-term success of clean energy transitions depends on a highly skilled and inclusive workforce. Platforms such as the Solar Premier League play a critical role in identifying emerging talent, fostering innovation, and strengthening the national solar skilling ecosystem.

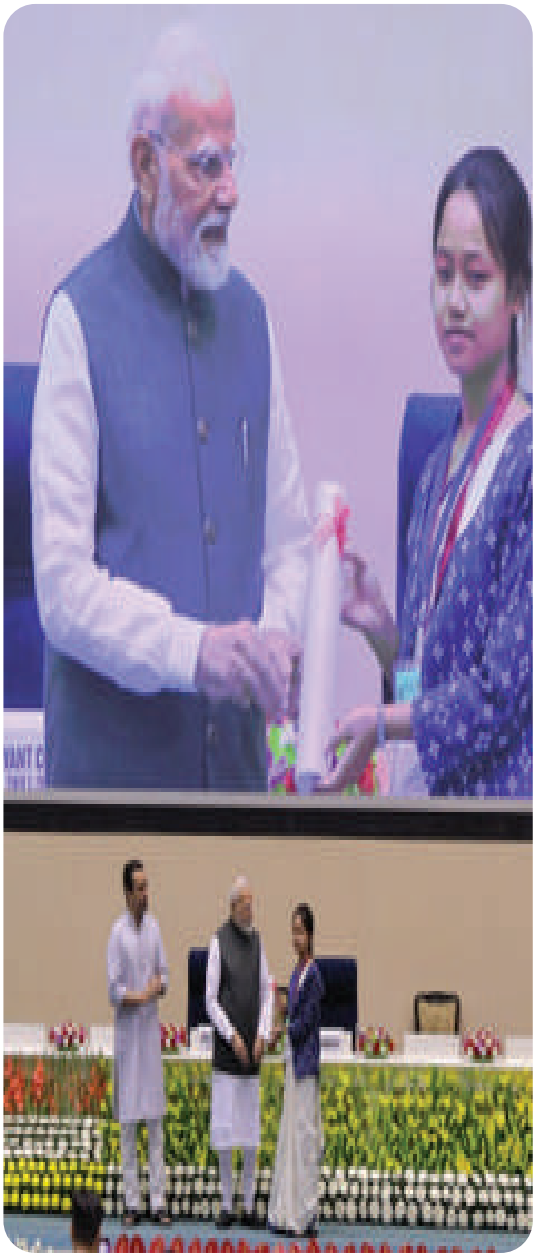
SCGJ congratulates all participants and winners for their dedication, ingenuity, and meaningful contribution to India's renewable energy journey. Together, we remain committed to advancing the vision of a skilled, green, and sustainable India.

Kaushal Deekshant Samaroh

The 4th Kaushal Deekshant Samaroh (National Skill Convocation), organised by the Directorate General of Training under the Ministry of Skill Development and Entrepreneurship, Government of India, was held on 4 October 2025 at Vigyan Bhawan, New Delhi. The event recognised excellence in vocational education and reaffirmed India's commitment to building a skilled and future-ready workforce.

The ceremony was graced by the Hon'ble Prime Minister of India, Shri Narendra Modi, who outlined a national vision for youth empowerment through skills aligned with self-reliance, innovation, and sustainability. The Skill Council for Green Jobs (SCGJ) participated in the convocation, reiterating its role in advancing green skills to support India's sustainable and climate-resilient economic transition.

The convocation honoured 46 all-India toppers from ITIs and marked the launch of key initiatives, including PM-SETU, a ₹60,000 crore programme to modernise 1,000 ITIs; the establishment of 1,200 vocational skill laboratories in schools nationwide; and new skill and employability programmes in Bihar aimed at strengthening regional skill development.



SCGJ Participation in the India–Australia Renewable Energy Partnership Panel Discussion

linkedIn.com

Mr. Arpit Sharma CEO - Skill Council for Green Jobs (SCGJ) participated in a panel discussion on "India–Australia Renewable Energy Partnership (REP) – Progress and Opportunities," underscoring its active role in advancing international collaboration on clean energy and green skilling. The discussion provided a platform to reflect on the progress achieved since the partnership's launch and to identify future opportunities aligned with India's clean energy transition.

Youth Central 2025
Co-Creating Solutions with Youth at the Centre

The Skill Council for Green Jobs (SCGJ) participated in Youth Central 2025, a national convening that placed youth at the centre of India's sustainable and inclusive development agenda. The platform brought together over 100 stakeholders from government, industry, civil society, and youth networks to foster dialogue and co-create youth-led solutions focused on sustainability, equity, and future readiness.

Mr. Arpit Sharma, CEO, SCGJ, contributed to the deliberations, highlighting the need to align skilling initiatives with emerging green industries and to strengthen pathways for future-ready employment in the green economy. Discussions were structured around key themes including green skills, equity and inclusion, rural entrepreneurship, women's economic participation, and youth centrality in policy and decision-making.

SCGJ reaffirmed its commitment to empowering young people through quality green skilling and acknowledged YuWaah at UNICEF India and partners for facilitating a collaborative platform advancing youth-led action and innovation.

Insights

It captures sectoral perspectives, field experiences, and analytical viewpoints on green jobs, renewable energy, and sustainability, supporting informed dialogue and continuous learning within the green skilling ecosystem.

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Building Quality Through Process: Why Structured Curriculum Development Matters

- Mukul Saxena ,Head - Standards & Research

The Challenge

In green skills training, SCGJ faces a critical question: How do we ensure quality and consistency across programs involving dozens of experts, multiple stakeholders, and tight timelines? The answer is simple yet profound" structured processes for curriculum development are not constraints; they are the foundation of excellence.

Quality training begins with a clear value chain: Job Role Analysis â†' Competency Mapping â†' Learning Outcome Definition â†' Instructional Design â†' Implementation & Evaluation.

When this chain is broken, consequences cascade. Learners fail to acquire required competencies. Teams work in silos. Budgets and timelines overrun. Rework multiplies.

The Hidden Costs of Ad Hoc Development

Without documented processes, organizations predictably encounter these problems:

Loss of Focus. Without explicit learning objectives, course designers create content based on intuition rather than industry needs. A solar technician course might emphasize theory while neglecting hands-on diagnostic skills"the competencies employers prioritize.

Team Misalignment. When dozens of contributors work without a shared framework, silos form. A renewable energy installation module designed by one expert proceeds without coordination with safety or sustainability modules, leaving gaps in learner progression.

Budget & Timeline Overruns. Unstructured development breeds rework" revising content because objectives were misunderstood, redesigning assessments that don't measure intended competencies, or rewriting facilitator guides. Organizations without clear processes typically spend 30-50% of development effort on preventable rework.

Slow Onboarding. New team members lack a common framework to understand how decisions connect. Timelines extend. Quality becomes inconsistent.

Inability to Forecast Costs. Without documented processes, estimating development costs becomes guesswork. How many hours for learning outcomes? How much expert time for validation? Without clarity, budgets cannot be planned responsibly.

Underutilized External Expertise. SCGJ's greatest asset is industry expertise" solar companies, manufacturers, certification bodies. Yet many hesitate to contribute because they don't understand the

development process. Without clarity on what expertise is needed, when, and how it's applied, collaboration becomes frustrating.

The Power of Structured Processes

Organizations implementing disciplined curriculum development experience transformative benefits:

Optimal Resource Utilization. Clear processes enable rapid onboarding, shared language across functions, and strategic expert deployment. Content is produced once and produced well" eliminating redundant effort.

Stakeholder Satisfaction. Learners engage with programs thoughtfully designed around their needs. Sponsors see objectives achieved. Industry partners contribute meaningfully. Facilitators gain confidence in delivery.

Structured Yet Creative. Processes don't constrain creativity" they enable it. Clear structure frees designers and experts from tactical confusion, allowing focus on innovation: finding engaging teaching approaches, designing immersive practice scenarios, and tailoring instruction to diverse learners.

Global Standards: ADDIE and NSQF

Leading training organizations worldwide use the ADDIE model" Analyze, Design, Develop, Implement, evaluate" originated in U.S. military training systems and now the global standard.

India's National Skills Qualification Framework (NSQF) adopts this same logic, emphasizing outcome-based design aligned to industry-recognized National Occupation Standards. This ensures programs are relevant and credible" both nationally and globally.

The SCGJ Curriculum Development Process

SCGJ's process should embody four characteristics:

1. Encourages Yet Structures Creativity. Begin with clear guiding principles" program goals, learner profiles, industry needs" then provide flexibility in execution. Subject matter experts select real-world examples, design practice scenarios, and develop assessments reflecting industry experience. Structure prevents chaos; flexibility encourages innovation.

2. Simple to Understand and Follow. Processes that are too complex become obstacles. Use clear language, visual workflow diagrams, and straightforward templates. A new team member, external expert, or funding partner should quickly grasp what the process is, why each step matters, and their role within it.

3. Compliant with Global Standards. Align with ADDIE and NSQF frameworks. This ensures SCGJ programs are credible globally, align with international certifications, and position SCGJ as world-class.

4. Outcome and Evidence-Based. Center on learner outcomes" specific competencies, knowledge, and skills. Build assessment

into design from the beginning, not as an afterthought. Measure program effectiveness and document improvements.

The Investment and Return

Implementing structured processes requires upfront investment: defining the process, training teams, creating templates, establishing quality checkpoints. Yet this returns dividends:

- Scale training development by adapting successful designs across sectors and geographies
- Build organizational knowledge that persists across team transitions
- Facilitate partnerships with industry and government organizations expecting professional, standards-aligned approaches
- Position SCGJ as trusted in world-class vocational training
- Reduce hidden costs of poor planning, rework, and missed learning objectives

Conclusion

The green energy sector is expanding rapidly. India's renewable energy, sustainable manufacturing, and environmental commitments create extraordinary demand for skilled workers. SCGJ stands at this opportunity's center.

But scaling workforce development requires more than good intentions. It requires processes ensuring every learner experience is thoughtfully designed, clearly aligned to industry needs, and measurably effective.

By establishing a structured, outcome-based curriculum development process" aligning with global standards yet remaining simple and accessible€" SCGJ ensures quality becomes not chance, but fundamental.

The value chain begins with identifying job roles in industry. It ends with learners truly prepared to meet industry needs. The structure connecting these endpoints is not a constraint on excellence. It is excellence itself.

Biochar-Driven Sustainable Forest Management for Climate Action and Green Livelihoods

- Vinod Raghav -Dy. Manager, Standards & Research

Sustainable Forest Management (SFM) means managing forests in a way that keeps them healthy while allowing people to benefit from them. Forests are important because they store carbon, protect soil and water, support plants and animals, and provide livelihoods to many communities.

According to the India State of Forest Report 2023, forests cover 21.76% of India's land area. Trees outside forests add another 3.41%. Together, forest and tree cover make up 25.17% of the country. This shows that forest protection efforts are making progress, but many forest areas still need restoration.[1]

Out of about 0.60 million square kilometres of recorded forest area in India, around 0.42 million square kilometres are degraded or affected by invasive species and need active management through **Improved Assisted Sustainable Management (IASM)**. The remaining 0.18 million square kilometres of open forests can recover through **Assisted Natural Regeneration (ANR)** if supported properly.[2] Restoring these forests is important for climate protection, healthy ecosystems, and livelihoods.

Importance of Sustainable Forest Management

Forests act as natural carbon sinks by storing carbon in trees and soil. Sustainable forest management helps protect this stored carbon and allows forests to absorb more carbon over time. Healthy forests are also better able to handle forest fires, pests, droughts, and climate change impacts. Community-led forest restoration improves forest health while also supporting local livelihoods.[3]

Forest fires and burning of biomass continue to damage forests and air quality. India's reporting to the UNFCCC estimates that methane and nitrous oxide emissions from forest fires were about 1.055 million tonnes of CO_2-equivalent in 2020, excluding carbon dioxide.[4] Crop residue burning, especially in northern India, also causes air pollution and health problems. Although government actions have reduced burning in some areas, the problem still continues.[5]

Biochar as a Supporting Tool for Forest and Land Restoration

Biochar is made by heating biomass—such as surplus crop residues, forest litter, and invasive plant material—in a low-oxygen environment. This process avoids the smoke and pollution caused by open burning. When biochar is added to soil, it improves soil quality, helps retain water and nutrients, and stores carbon for long periods.

A scientific study published in 2024 estimates that India produces about 156 million tonnes of surplus crop residues every year. Converting some of this biomass into biochar instead of burning it can help reduce greenhouse gas emissions and increase carbon storage in soils under suitable conditions.[6] These estimates mainly relate to agricultural residues,

and any use of forest biomass must follow sustainability safeguards.

Restoring Degraded Forests and Mines Land: Supporting a Just Transition

Biochar can be especially useful for restoring degraded forests, fire-affected land, and abandoned or depleted mine areas. These lands often have poor or polluted soils that make plant growth difficult. International studies show that biochar can reduce the movement of harmful heavy metals in soil, improve soil structure, and support plant growth.

At the Grizzly Creek mine site in the United States, biochar was used to reduce sediment and mercury pollution in water runoff.[7] Studies on coal mine spoil have also shown that biochar improves soil health and increases soil carbon levels.[8]

These benefits support the idea of a **Just transition**. As coal mining and other extractive activities decline, many workers and nearby communities lose their main source of income. Biochar production and forest restoration can create new green jobs in biomass collection, biochar production, land restoration, tree planting, and environmental monitoring. This helps ensure that climate action also supports people and communities.

Jobs and Livelihoods by 2047

Restoring about 0.60 million square kilometres of recorded forest area through sustainable forest management by 2047 could create around **1.61 million full-time equivalent (FTE) jobs**, meaning stable, year-round employment. These jobs would be spread across forest nurseries, natural regeneration activities, invasive species removal, biochar production, and restoration work.[2,9]

Sustainable forest management also strengthens livelihoods for forest-dependent communities. Around 275 million people in India depend on forests for 20–60% of their income. Healthy forests improve access to non-timber forest products, food security, and long-term livelihood stability.[10]

Skills and Training for Green Jobs

To support these activities, skilled workers are needed. In India, the Skill Council for Green Jobs (SCGJ) has developed courses related to forestry and non-timber forest products, such as Apiculturist (Wild Bee) – NTFP and Micro-Entrepreneur – NTFP (Plant Origin). SCGJ has also indicated plans to introduce a course on **Biochar Production and Application** in the near future. This will help train people from forest areas, rural regions, and old mining areas for green jobs linked to restoration and climate action.

Community-Led Success

Community-led forest restoration has already shown positive results. Since 2008, the organisation Junglescapes has restored about 1,200 hectares of degraded forest in the Bandipur Tiger Reserve, Karnataka. Working with local communities and the forest department, the project restored many native plant species, improved forest cover, increased local incomes, and reduced human–wildlife conflict.[11]

Conclusion

Sustainable forest management, supported by biochar, offers India a practical way to protect forests, reduce pollution, restore degraded and mined lands, and create green jobs. By linking forest restoration with climate action, skill development, and a just transition for affected workers, India can protect nature while improving livelihoods on the path to 2047.

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Qualifications

SCGJ qualifications are industry-aligned frameworks developed to meet the skill requirements of India's green economy. They define clear occupational standards, competencies, and assessment criteria, enabling structured training, certification, and workforce readiness across renewable energy and sustainability sectors.

SCGJ
SKILL COUNCIL FOR GREEN JOBS
ISO 9001 : 2015 CERTIFIED

Solar Energy

leads with 15 distinct job qualifications

Entry-Level: Solar PV Installation Helper (NSQF Level 2)

Advanced: Rooftop Solar Grid Jr. Engineer (NSQF Level 5)

Roles range from installation helpers to specialized engineers and entrepreneurs.

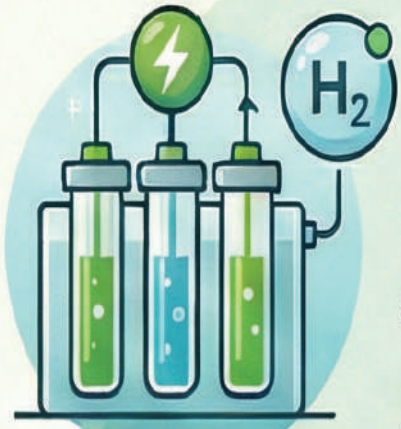
Waste Management

offers 11 career pathways, from recycling to policy

Plastic Recycling Operator

Waste Optimisation Professional

Scan to Know more about all Qualification



Green Hydrogen

major emerging field with 12 qualifications

Focuses on plant operations, electrolyzer manufacturing, and project finance.

Entry-Level: Green Hydrogen Plant Jr. Technician (NSQF Level 3)

Advanced: GHG Accounting & Reporting (NSQF Level 6)

Sustainability

roles focus on corporate compliance and impact assessment.

ESG | **Carbon Accounting** | **Environmental Impact Assessment**

Environmental Management & Sustainability Sectors

Diverse opportunities exist in other specialized green sectors

Bio-Energy | **Water Management** | **Eco-Tourism** | **Forestry** | **Small Hydro**

*Based on active Qualification

Editor of this Issue

Daniel P

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