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SHAKTI SUSTAINABLE ENERGY FOUNDATION

India Distributed Renewable Energy Summit (IDRES) 2026

SUMMARY REPORT

9th, 10th and 11th February 2026

Executive Summary

IDRES 2026 brought together more than 400 participants - policymakers, investors, civil society leaders, researchers, and grassroots entrepreneurs- at India Habitat Centre, New Delhi, from 9 to 11 February 2026. Organised by CLEAN in partnership with the Ministry of New and Renewable Energy (MNRE), the Summit unfolded across four thematic workshops, seven plenary sessions, a 40-exhibitor DRE technology exhibition, an awards ceremony, and an investment matchmaking programme. It marked a decisive shift in the sector's conversation: from energy access to productive, livelihood-linked impact.

What the Summit Heard

The Summit placed a strong focus on the impact of decentralised renewable energy on livelihoods. CEEW data showed that over 90% of DRE users recorded at least a 33% increase in income, and enterprises supported across 20 states unlocked more than 35,000 livelihoods, predominantly among women, while raising over $8 million in capital. The case for treating productive-use DRE as a central instrument of rural development, rather than a peripheral programme, has rarely been stronger.

Operations and maintenance emerged as the sector's most urgent unresolved gap. Community trust is not built at installation; it is built, or lost, in the months and years that follow. There was a broad sense across sessions that O&M capacity deserves to be planned and funded as a co-equal requirement alongside deployment, and that counting systems installed without tracking systems still operational is a metric the sector may wish to reconsider.

On policy, a recurring theme was the distance between intent and instruction. DRE's convergence with agriculture, food processing, and rural livelihood schemes is happening in pockets, but rarely because systems are designed for it. Formal notifications that translate high-level policy commitments into financial flows for implementing agencies remain, in many cases, the missing step. On quality, sessions were consistent: lowest-bid procurement produces systems that fail, and failed systems erode exactly the community confidence the sector depends upon. A minimum quality floor covering, earthing, mounting structures, inverter ratings, and DC safety standards would be a meaningful protection for communities and for the sector's long-term standing.

Gender ran as a thread through almost every conversation. 60 to 70 per cent of DRE users at the village level are women, yet women make up only 11 per cent of India's renewable energy workforce. The sector's aspiration is clear; the question raised repeatedly was whether financing products, skilling infrastructure, and procurement processes are yet designed to make that aspiration real.

Directions for the Road Ahead

Several areas emerged where early action could make a significant difference. Standardised impact metrics and repayment data could meaningfully close the gap between DRE's actual risk profile and how lenders perceive it. On workforce development, beginning skill assessment and local recruitment four to six months before commissioning, rather than after, was offered as a practical starting point. Africa presents a significant and under-utilised opportunity: the continent is ready for implementation partners, and India's two decades of rural electrification experience is directly relevant.

Looking Forward

The evidence for DRE's transformative potential is no longer in question. What IDRES 2026 made clear is that the sector is ready to move from last-mile connectivity to the first step towards expansion, and that doing so will require the same coordination, patience, and ambition that brought it this far. CLEAN and its co-partners look forward to carrying the work of this Summit into the months ahead.

"When an ecosystem is ready, market forces penetrate rapidly. Government schemes must influence ecosystem building." - Svati Bhogle, Founding Chairperson, CLEAN

Event Objective

The world stands at a decisive moment in the fight against climate change. Energy systems contribute nearly 73% of global GHG emissions, and accelerating the shift to clean, distributed renewable energy is central to achieving global climate goals.

India has emerged as a global leader in renewable energy, ranking among the top five nations in installed capacity and committing to 500 GW of non-fossil energy by 2030. Over the last decade, it has electrified more than 370 million people, transforming the social and economic fabric of rural communities.

The next frontier lies in harnessing DRE solutions- both electrical and thermal.

Objectives of IDRES 2026

Intended Audience

- DRE practitioners and enterprises
- Government institutions (ministries, state nodal agencies, regulators)
- Investors and financial institutions
- Think tanks and research bodies
- Industry associations and CSR leaders
- Civil society organisations and grassroots innovators

Brief Programme Schedule

Workshops (Invite Only) – 9 February 2026

Workshop Title
Energy Efficiency and Standards
Affordable Financing for DRE
Strengthening CSOs for Last-Mile Distribution Agencies
Quality Assurance and Consumer Code of Protection

Day 1 – 10 February 2026

Session Title
Inauguration of the Summit and Setting the Context
Global Partnership for Local Impact & Inaugural of Exhibition
Converging Policies for Scalable Distributed Renewable Energy (DRE) and Livelihoods
India–Europe Private Sector Collaboration: Building on a decade of partnerships for scaling DRE
Women in DRE: From Practice to Policy
Celebrating Success in the Sector
Networking and Dine

Day 2 – 11 February 2026

Session Title
India–Africa Development Partnership for Distributed Renewable Energy (DRE): From Policy Collaboration to On-Ground Impact
Streamlining Financing for DRE
Powering MSMEs through Distributed Renewable Energy Solutions
Future-Ready Workforce for DRE & Clean Energy
Valedictory Session

Workshop Summary

Date: February 9, 2026

Venue: MNRE, Atal Akshaya Urja Bhawan, New Delhi

Workshop on Energy Efficiency & Standards

CO-PARTNERED BY CLASP

LEAD FACILITATORS: SHARATH RAO (BOARD MEMBER, CLEAN / FELLOW, CSEP)

Overview

The workshop was structured as a progression from framing to action: diagnosing technical performance gaps, benchmarking India's standards against global frameworks such as VeraSol and IEC, deep-diving into testing and regulation, and developing technology-specific action roadmaps for cooling, milling, and irrigation. Facilitated by Sharath Rao (CLEAN Board, CSEP) and Jatin Mathur (CLASP), it drew in international and domestic institutions including IEC, BIS, NISE, EESL, and Villgro.

35 to 200 lm/W	**20%**	**15,000 to 45,000 hrs**	**50%**
LED efficacy improvement under standards-driven innovation	Water-use efficiency gain after PM Kusum pump spec upgrade in 2019	Equipment lifespan possible in DC domain (vs AC inverter systems)	Historic T&D losses that made efficiency a national priority

Keynote Address

Dr Jeevan Kumar Jethani

Executive Director, AREAS & Scientist-F, Ministry of New and Renewable Energy (MNRE)

Dr Jethani's keynote combined technical insight, policy direction, and field experience, grounding India’s quality and efficiency agenda in the practical realities of decentralised renewable energy deployment.

1. Energy Efficiency: A Foundational National Principle: Reiterating a classic engineering adage, he emphasised: "One unit saved is two units generated." Drawing from his early career experience witnessing nearly 50% transmission and distribution losses, he highlighted that improving efficiency at the consumption end creates greater national value than simply adding generation capacity. He also reflected on India’s technological progression — from early solar installations costing ₹30–40 crore per MW to today’s efficiency gains such as LED efficacy improvements from ~35 lm/W to nearly 200 lm/W, demonstrating how innovation and standards drive affordability.

2. Efficiency as a Practical Design & Cost Strategy: Dr Jethani stressed that efficiency is not merely an environmental goal but a system design necessity in DRE applications:

> *"If it is not efficient, you have to put more storage, more solar panels, which are more costly. Make it more efficient, and your storage will be reduced."*

He explained that inefficient systems increase dependence on larger PV arrays and battery storage, significantly raising capital costs for rural deployments.

3. Upgrading Standards under National Schemes: Highlighting policy evolution, he noted that:

- PM-KUSUM solar pump specifications were upgraded in 2019, improving water-use efficiency by nearly 20%.
- The Ministry is currently working toward next-generation efficiency upgrades.
- Adoption of Universal Solar Pump Controllers (USPCs) was encouraged to enable productive use of solar assets beyond irrigation — including applications such as chaff cutting, cold storage, and agro-processing when pumps remain idle.

4. From "Design to Fail" to "Design to Work": Calling for a shift away from planned obsolescence, he remarked, "We should not work on the concept of 'Design to Fail.' We should work on 'Design to Work' for a longer life... Think from the citizen perspective, not just the business perspective." Using the analogy of products that fail shortly after purchase, he stressed that India, as a resource-constrained developing country, cannot afford inefficient or short-lived technologies.

5. Monitoring, Data & Accountability of Public Assets: Emphasising performance tracking, he stated, "You can't manage what you cannot monitor. Without monitoring, you don't know what is happening to all your assets."

Key facts highlighted included:

- Mandatory Remote Monitoring Systems (RMS) integration under schemes like PM-KUSUM.
- Requirement of Machine-to-Machine (M2M) communication in inverters under PM Surya Ghar, ensuring real-time data flow to state and national monitoring portals.
- Monitoring is essential to safeguarding public investments and long-term asset productivity.

6. User-Centric Standardisation for Rural Deployment: Framing quality standards through an end-user lens, he observed, "in India, products are generally used in rural areas by those who are not very literate... we must make these things user-friendly and robust so that there is not much troubleshooting required."

He emphasised that technologies must be robust, intuitive, and low-maintenance, particularly where technical servicing ecosystems remain limited.

Key Findings

- **Product Design and System Architecture:** Emphasis on the need to shift toward "Design for Replaceability." A transition into the DC domain was highlighted as a way to improve system efficiency and extend equipment lifespan (estimated at 15,000–45,000 hours) by reducing points of failure related to inverters.
- **Quality Assurance and Standards:** Importance of localising international quality assurance frameworks to suit the Indian ecosystem better. Need for a stronger institutional framework linking safety protocols with national energy standards. Establishing a minimum "quality floor" to prevent substandard products from entering the market and affecting user trust.
- **Technology Testing and Validation:** Specialised test methods for solar appliances, including solar pumps and thermal storage systems, are being developed and validated through field testing. However, lab certification alone does not guarantee field durability, as environmental and operational conditions can significantly influence performance.
- **Field Realities and Deployment Challenges:** In high-humidity regions such as Meghalaya, systems often fail due to approximated earthing and corrosion of mounting structures, highlighting the gap between standards on paper and field implementation. In decentralised applications such as farm-gate cold storage pilots, remote monitoring remains difficult due to a lack of network connectivity in many rural locations. Standard home inverters are frequently used for industrial or productive loads, leading to frequent tripping and loss of user confidence.

- **Information and Data Gaps:** Manufacturers often do not provide motor efficiency curves and detailed technical specifications, making it difficult for entrepreneurs to correctly size solar loads. At the retail level, the lack of data on peak starting currents makes proper system sizing challenging for local vendors.
- **Market and Policy Constraints:** Delays in government scheme approvals at the point of sale often discourage customers and may push them toward conventional diesel-based alternatives. There is a need to ensure that technical feasibility and commercial viability are assessed together to support the sustainable deployment of livelihood-focused DRE solutions.

Key Challenges Identified

The Inverter Bottleneck	Standard home inverters are frequently used for industrial loads, leading to constant tripping and loss of user trust.
Data Transparency	Lack of technical data at the retail level regarding peak starting currents makes correct system sizing nearly impossible for local vendors.
Policy vs. Speed	Government scheme approval delays often happen at the "point of sale," causing customers to lose interest or opt for inefficient diesel alternatives.

Recommendations

Shift to DC-native design	Prioritise DC-direct appliances that bypass the inverter entirely, extending system life and reducing the most common failure point in DRE productive use systems.
Mandatory technical data sheets	Require all manufacturers to publish standardised peak starting current and motor efficiency curve data as a condition of market entry for DRE-compatible equipment.
Localised and long-term field testing	Supplement lab certification with testing sites in diverse climatic conditions including high humidity and extreme heat to validate durability in actual deployment environments.
Post-purchase performance incentives	Explore shifting a portion of subsidy support to post-purchase performance benchmarks to maintain quality focus beyond the point of sale.
Adopt Universal Solar Pump Controllers	Promote USPCs to unlock productive use of PM Kusum solar assets beyond irrigation during idle periods, enabling chaff cutting, cold storage, and agro-processing on the same infrastructure.
Establish a quality floor	Define minimum product standards below which equipment cannot enter the market, with particular attention to earthing specifications, mounting structure coatings, and inverter ratings for productive use loads.

Affordable Financing for DRE

Co-partnered by Council on Energy, Environment and Water

Lead Facilitators: Ms Rekha Krishnan, Founder and Managing Director, WEFT and
Wase Khalid, Program Head, CEEW

Overview

The workshop brought together technology developers, end-users, and financial institutions to advance a critical agenda: making Distributed Renewable Energy (DRE) livelihood technologies bankable. Central to the day's deliberations was the feedback on the DRE Financing Toolkit — a structured financial modelling instrument developed by CEEW to standardise credit appraisal, compare baseline scenarios, and reduce risk perception gaps faced by lenders and borrowers alike, while also exploring how CLEAN's climate finance facilitation desk can better support access to capital for DRE solutions.

Technology Group Highlights

Solar Dryers	Strong value-addition potential in agri-clusters; toolkit needs commodity-specific templates and utilization sensitivity analysis to reflect seasonal income patterns.
Cold Storage	Viability is location-specific and depends on demand aggregation; crop-specific financial benchmarks and occupancy sensitivity modelling are essential for lender confidence.
Micro Horticulture Processor	High potential when paired with aggregation models; requires strengthened working capital modelling and cluster-based templates to address raw material variability.
Vertical Fodder Grow Unit	Directly linked to dairy income improvement; FPO-based financing models and dairy price sensitivity analysis recommended to manage adoption and payback risk.
Solar Refrigerator	Well-suited for micro-enterprises with consistent local demand; EMI structures must align with short revenue cycles, and maintenance costs should be built into loan design.

Key Financing Barriers Identified

Participants from across the value chain converged on a shared set of structural barriers limiting the flow of capital to DRE livelihood technologies:

- High perceived credit risk that often exceeds actual risk - a communication and data gap, not an inherent technology flaw
- EMI structures are misaligned with the seasonal and irregular income patterns of rural borrowers
- Uncertainty around government subsidies is undermining project viability projections
- Low borrower equity levels, reducing lender comfort without additional guarantees
- Weak market linkage integration in financial models, obscuring revenue realisation risk

- Inadequate financial documentation among borrowers at the last mile

Insights from Financial Institutions

Lenders provided candid perspectives on what it takes to make DRE projects fundable, offering a clear set of principles that developers and toolkit designers must internalise:

Subsidy-Independent Viability Projects must demonstrate financial sustainability on their own merits. Subsidy dependency heightens perceived risk and delays approvals.	**Borrower Equity Contribution** Meaningful equity from the borrower signals commitment and reduces default risk — a non-negotiable for most lending institutions.
Credit Guarantee Mechanisms Partial credit guarantees significantly lower lender hesitation, especially for first-time DRE borrowers with limited credit history.	**Mandatory Insurance Coverage** Insurance for both the technology asset and the underlying livelihood activity is essential to protect both lender and borrower.

Workshop Synthesis

The workshop established a set of foundational principles that can guide the broader financing ecosystem:

- Risk perception consistently exceeds actual risk — better data and transparent modelling can close this gap
- Context-specific financial modelling is not optional; a single template cannot serve diverse geographies, crops, and enterprise types
- Cash flow clarity is the single most important determinant of bankability — models must reflect ground realities
- Market integration is as important as technology performance; revenue certainty drives repayment confidence
- Flexible financing structures — including moratorium periods, seasonal EMIs, and revolving credit — are essential, not exceptional

Action Points

CLEAN Climate Finance Facilitation Desk	• Facilitate structured engagement between DRE developers and lending institutions • Explore and operationalise a climate finance facilitation support mechanism • Organise capacity-building sessions for technology developers on financial documentation
CEEW DRE Financing Toolkit	• Revise the financing toolkit, incorporating all stakeholder feedback from this workshop • Integrate commodity-specific and crop-specific financial benchmarks across all five technologies • Strengthen risk assessment parameters and develop a simplified field-level version of the toolkit

Workshop on Strengthening CSOs for Last-Mile Distribution Agencies

Co-partnered by SELCO Foundation

Lead Facilitators: Ishira Pandey & Sneha Gokhale

Overview

Part of the India Distributed Renewable Energy Summit (IDRES) 2026, this workshop convened a diverse coalition of practitioners, clean energy enterprises, and civil society organisations (CSOs) to address a systemic bottleneck: the last-mile distribution gap. The session explored the strategic pivot of transitioning CSOs from traditional community mobilizers into professional, sustainable distribution agencies, while identifying the high-potential value chains and policy shifts required to scale India's rural energy transition.

Key Discussion Highlights

- **Priority Value Chains:** Non-Timber Forest Produce (NTFP) High potential for solar-enabled aggregation and initial processing; estimated 20–30% value-addition upside for tribal communities. Horticulture: Critical need for decentralised solar-powered cold storage and processing to reduce post-harvest loss and enable market timing.
- **Revival of Unutilized Assets:** Participants identified the rehabilitation of existing, underutilised DRE infrastructure as a prerequisite for sector growth. Reviving "ghost assets" is more capital-efficient than fresh deployment and is vital to restoring community trust.
- **Capability Gap: Specialist vs. Generalist:** A core debate centred on whether NGOs should build end-to-end commercial capabilities (negotiation, aggregation, sales) or remain thematic specialists who form structured collaborations with professional market actors.
- **Vendor & Technology Rating Framework:** To mitigate procurement risks for CSOs and end-users, a proposal was raised for a rating framework assessing technology durability, after-sales service credibility, and the availability of a "package of practices" (O&M training).

Key Distribution Barriers Identified

Participants identified structural hurdles that prevent CSOs from effectively bridging the gap between DRE enterprises and rural consumers:

- Limited Technical & Entrepreneurial Know-how: Most CSOs lack the specialised skills to manage DRE hardware or run sustainable retail operations.
- Fragmentation of PURE Ecosystem: Technology providers are often disconnected from local NGOs, who hold the "trust capital" in the community.
- Policy Constraints in Procurement: Rigid tender processes often force CSOs to choose the lowest-cost vendor over the highest-quality long-term service provider.

- Grant Dependency: A persistent reliance on traditional funding models hinders the transition to market-based, self-sustaining distribution roles.
- Absence of Local Ownership: A lack of community-level troubleshooting and O&M skills leads to high failure rates and technology rejection.

Strategic Takeaways for Strengthening CSOs

The deliberations yielded a set of foundational principles to guide the transformation of CSOs into credible market enablers:

- **Asset Revival Over Fresh Deployment:** Prioritising the functional restoration of existing DRE units is the most effective way to rebuild trust and prove technology reliability to marginalised end-users.
- **Trust as Infrastructure:** CSOs possess the trust capital and outreach networks that enterprises lack. Strengthening this "soft infrastructure" through technical skilling is faster than building new distribution networks from scratch.
- **State-Level Coordination:** The establishment of state-level DRE consortia or task forces is essential for knowledge exchange, vendor validation, and joint problem-solving across different districts.
- **End-User Skill Integration:** Local capacity for operations, maintenance, and basic troubleshooting must be an embedded, non-negotiable component of the initial project design and financing.

Workshop Synthesis

The workshop concluded with a clear consensus on the roadmap for scaling last-mile energy access:

- Trust restoration through asset revival must precede major fresh investments in failed geographies.
- Value-chain-led integration (NTFP and Horticulture) offers the clearest path to economic viability for DRE-CSO partnerships.
- Standardisation via rating mechanisms will reduce procurement risks and increase vendor accountability.
- Policy enablement is required to allow CSOs greater flexibility in selecting quality partners and decentralised procurement models.
- Blended financial models and resource pooling are necessary to move CSOs away from traditional, restrictive grant dependency.

Action Points

- Framework Development: CLEAN to initiate a structured roadmap for equipping CSOs with a professional "distribution toolkit" covering finance, tech, and O&M.
- State Consortium Pilot: Launch a state-level DRE learning platform in a high-potential region to facilitate vendor validation and peer learning.
- Vendor Rating Draft: Develop a draft framework for a technology and service rating system to guide last-mile procurement.
- Accelerator for CSOs: Design and implement a targeted accelerator program to build the operational, technical, and financial capacities of CSOs, enabling them to effectively deploy and scale DRE solutions at the last mile.

Workshop on Quality Assurance & Consumer Code of Protection

Co-partnered by GOGLA

Lead Facilitators: Praviin B. Kumar & Akansha Chaurey

Overview

Facilitated by Praviin B. Kumar (GOGLA) and Akansha Chaurey, the session opened with a provocation: even a product that leaves the factory with full QC certification enters a zone of non-compliance the moment it reaches a user whose home ecosystem, sockets, wiring, and earthing are unstandardised. Consumer protection does not begin or end at the factory gate. The session used breakout groups across Rooftop Solar (RTPV) and Productive Use (PURE) to surface concrete recommendations.

Rs. 4/unit	**100M+**	**Rs. 22,000 Cr**	**30%**
Loss incurred by UPPCL on domestic supply (ACS Rs. 9.45 vs revenue Rs. 6.40)	Lives powered by Sun King globally — quality as proof of scale	PM Surya Ghar budget for 2026-27 (up from Rs. 17,000 Cr)	Storage integration recommended at DTR level for grid stability

Key Discussion Points

- **The regulatory framework has a grey zone nobody owns:** The session opened with a real incident: an EV being charged from a standard home socket caused a battery explosion that triggered a secondary explosion in an AC unit in the same building. Every individual component in the chain was certified. But the system failed because no single regulation governs the interface between products once they are in the hands of a user. The Electricity Rules, MNRE guidelines, and the Consumer Protection Act each cover a slice of the problem, and no clear grievance pathway exists for a third party navigating all three.
- **DISCOMs lose money on domestic supply and have little incentive to welcome DRE:** Research presented from NTPC School of Business used UPPCL data to show that state utilities lose approximately Rs. 4 per unit on domestic supply. DISCOMs are not passive bystanders in the DRE conversation; they are financially stressed actors locked into PPAs with coal and fossil energy suppliers. A proposed solution was the DRE Aggregator: a new entity operating at the distribution transformer level that aggregates rooftop solar and pumps to optimise local generation, reduce the DISCOM's purchase costs, and make DRE commercially attractive to utilities rather than threatening to them.
- **Quality is not just a consumer issue; it is a national grid issue:** Sun King's experience powering over 100 million customers globally was used to make a point that the sector needs to hear more clearly: a solar installation is a localised power utility, not a consumer gadget. A single substandard mounting structure or poorly manufactured cell does not just fail one customer; it degrades grid stability and erodes the public trust on which all

future DRE adoption depends. Traceability through ALMM compliance, IoT and GSM monitoring, and a unified grievance mechanism were proposed as the three pillars of a credible consumer protection framework.

- **Earthing failures are endemic and geography-specific:** Standard earthing guidelines assume soil conditions that do not exist across large parts of India. In rocky terrain, traditional earthing rods cannot penetrate the ground, yet installers routinely proceed without the specialised rock-earthing pipes the situation requires. Deeper earthing beyond the typical ~3 m may be needed to achieve the target earth resistance (≤ 5 ohms). In humid coastal areas, mounting structures corrode far faster than lab testing suggests. The gap between standard and field conditions is not a minor variance; it is a systematic failure that no certification process currently captures.
- **Hot-dip galvanisation standards mask a geographic supply gap:** While hot-dipped GI is the prevailing structural standard, facilities capable of reliably delivering the specified micron-level coating thickness are concentrated in major cities. Installers sourcing materials in smaller towns or rural areas routinely receive inadequately galvanised structures that accelerate corrosion under field conditions — a failure that neither the certification process nor post-installation inspection currently flags.
- **The shift to higher-voltage DC systems is outpacing safety standards:** Several manufacturers have moved toward higher-voltage battery configurations (typically ~72V–108V) to reduce I^2R losses, in the absence of a widely adopted DC safety standard. Unlike the broadly accepted 48V threshold for human safety, these higher-voltage systems pose serious lethal risk if not accompanied by appropriate protection, isolation, and safety features — yet DC-side safety requirements have not kept pace with this market shift.
- **The cold chain needs a harvest-to-consumption approach, not just a cold storage box:** The PURE breakout groups surfaced a problem specific to cold storage: the infrastructure is only as valuable as the supply chain around it. A solar cold storage unit that sits idle because no aggregation mechanism connects farmers to the market, or because seasonal crop cycles leave it empty for months, is not a livelihood asset. It is a stranded investment. FPOs and cooperatives were consistently named as the natural institutional aggregators who should anchor quality assurance and consumer protection for productive use technologies.
- **Budget increase in PM Surya Ghar reflects demand, not just reallocation:** The increase in PM Surya Ghar budget from Rs. 17,000 crore to Rs. 22,000 crore for 2026-27 was debated: was it a mathematical reallocation or a genuine demand signal? The session's consensus was that the sector must move beyond counting healthy statistics and focus on whether the expanding deployment is improving lives, particularly for women who are the primary users of DRE for income generation.
- **Global Consumer Protection Insights in DRE:** Insights from GOGLA's global Consumer Protection research highlighted key risks faced by DRE consumers, including financial risks from credit-based and PAYGo financing, product risks due to inconsistent quality, and service risks linked to weak after-sales support. Evidence shows that 38% of customers experiencing issues report unresolved problems, while nearly one-third struggle to complete loan repayments within contract terms. Strengthening consumer protection through responsible sales practices, quality products, reliable service, transparency, fair treatment, and data privacy has demonstrated clear business value by reducing customer default rates. Encouragingly, sector progress is visible, with over 122 companies endorsing the Consumer Protection Code, increasing adoption of certified products and trained technicians, and investors increasingly integrating consumer protection compliance into their due diligence processes.

Recommendations from Breakout Groups

Group RTPV-1: Standards and Accountability

- **Product Standardisation:** Both products and specific brands used in installations must be standardised to ensure reliability.
- **Traceability:** Implementation of QR codes on all major components is required to verify authenticity and track equipment history.
- **Workforce Certification:** Only certified installers should be permitted to carry out work to ensure technical compliance.
- **Financial Penalties:** Strict accountability mechanisms must be established, including financial implications and penalties for quality failures.
- **Grievance Redressal:** A **singl**e-window system for grievances should be created, featuring a clear government escalation matrix.
- **Stakeholder Involvement:** Funding agencies should be active participants in the quality assurance process, and O&M timelines must be strictly defined.

Group RTPV-2: Procurement and Monitoring

- **Expert-Led Tendering:** Technical specifications and standards for tenders must be framed by technically qualified and experienced personnel.
- **Minimum Price Benchmarking:** To prevent a "race to the bottom" on quality, tenders should set a minimum price floor; any quotation below this benchmark should be rejected.
- **Digital Oversight:** Mandatory use of Government Apps or GSM-enabled units is necessary to monitor the status and performance of installations remotely.
- **Practical Training:** Vendor training should shift from classroom settings to on-site, in-field training.
- **Consumer Guidance:** Proactive education is needed to guide consumers on how to choose systems, what to expect, and how to utilise dedicated grievance portals.

Group PURE-1: Solution-Oriented Procurement

- **Requirement-Based Solutions:** Procurement should move away from rigid technical specs; instead, buyers should state their needs, and vendors should provide the best technical solutions to meet those requirements.
- **Process-Based Ratings:** Vendor certification and ratings should focus on internal company processes (such as service and training) rather than just financial metrics.
- **Regional Systems:** Regional frameworks for procurement, monitoring, and training must be strengthened to better serve local needs.
- **Consumer-Friendly Design:** System nameplates should be designed with friendly language and symbols so consumers can easily understand technical details.

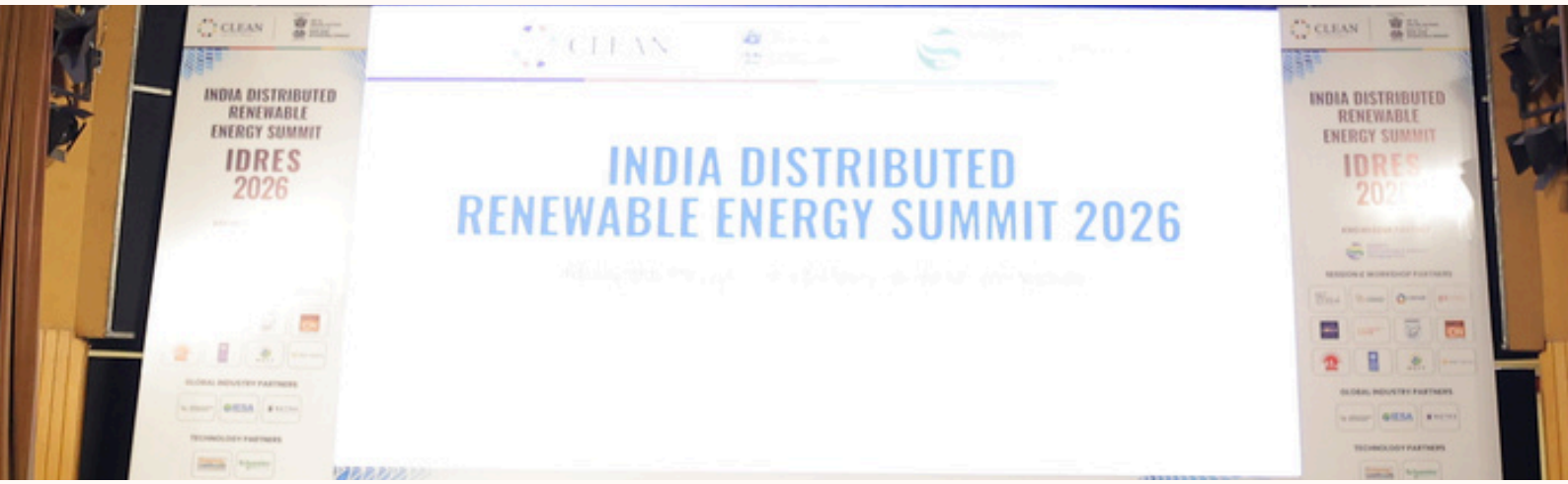
Group PURE-2: Supply Chain and Institutional Support

- **The Cold Chain Approach:** A comprehensive supply chain approach must be adopted for cold storage—from harvesting to consumption—to prevent infrastructure from becoming underutilised.
- **Institutional Aggregators:** FPOs and Cooperatives should serve as the single point of contact for ensuring quality assurance and consumer protection.
- **Mandatory Disclosure:** Licensed vendors must provide a Consumer Protection guide and mandatory disclosure of all material and system details to the consumer.
- **Ombudsman:** A single-point platform or Ombudsman should be established for centralised grievance redressal.

Action Points

- **Procurement Reform:** Implementation of minimum price benchmarks in tenders to prevent a "race to the bottom" and a shift toward solution-oriented bidding where vendors address specific buyer requirements.
- **Traceability & Monitoring**: Mandatory use of QR codes for component authenticity and GSM-enabled/IoT units for real-time remote performance tracking.
- **Technical Safety:** Prioritisation of the 48V DC standard for human safety and specialised earthing protocols (e.g., rock-earthing) for varied soil conditions.
- **Accountability:** Establishment of a single-window grievance redressal system or Ombudsman, backed by strict financial penalties and accountability for all stakeholders, including funding agencies.
- **Practical Training:** A shift from classroom-based learning to mandatory in-field vendor training and practical certification for installers.
- **Consumer Empowerment:** Requirement for mandatory disclosure of system details and the use of consumer-friendly nameplates and standardised documentation in local languages.

- **Supply Chain Sustainability:** Adoption of a holistic "harvest-to-consumption" approach for PURE applications (like cold storage) to ensure infrastructure supports actual income generation.
- **Collaborative Sectoral Initiative:** CLEAN Energy Access Network and GOGLA to explore developing a sectoral Quality Assurance and Consumer Protection tool for India to address certification gaps across PURE technologies and strengthen trust and market maturity.



Session Summary

Date: February 10th and 11th , 2026

Venue: India Habitat Centre, New Delhi

Opening Plenary: Global Partnerships for Local Impact

Co-Partnered by Shakti Sustainable Energy Foundation

MC: Ms Geetanjali Purkayastha, Member Engagement and Outreach Manager, CLEAN

Overview

The opening plenary of IDRES 2026 convened policymakers, international development leaders, researchers, and practitioners to mark the sector's shift from basic energy access to productive, livelihood-linked DRE. Eight speakers set the direction across government, global institutions, and civil society.

₹200 → ₹17	~30 GW	1,000 GW	650M+
Solar price per Wp, 2010 → 2024	India DRE capacity (PM Kusum + Suryaghar)	Global solar added in 2 years	People still without electricity globally

From the Plenary

Mr Nitin Akhade (President, CLEAN) opened with a personal reflection on nearly a decade of field experience across 28 Indian states and 12 African countries — from coffee pulping units in Nagaland's Tuengsang to silk spinning in Meghalaya's Garo Hills and milk processing in Rajasthan. Solar prices have fallen 12x since 2010, he noted, and with them the sector's ambitions have grown. But the real story is not in the price curve; it is in the people. Today, 60–70% of energy users at the village level are women, yet women make up only 11 per cent of India's renewable energy workforce. CLEAN's founding ethos of 'Create, Connect, Collaborate' has never been more relevant.

> *"The next phase of DRE must be measured not only in megawatts installed, but in enterprises created, livelihoods strengthened, and resilience built."* — *Nitin Akhade*

Ms Svati Bhogle (Founding Chairperson, CLEAN) traced DRE's long arc from small hydro and biomass gasifier pilots to today's PM Kusum and Suryaghar era, but refused to let the room rest on those achievements. Clean cooking, she said plainly, remains the elephant in the room. 45 years since the National Programme on Improved Chulhas, rural women are still cooking on smoky wood fires. Thermal energy is the larger unmet need, rarely discussed in policy circles. And while government schemes can drive numbers, they cannot alone build ecosystems: that requires patient, sustained commitment from every actor in the room.

> *"When an ecosystem is ready, market forces penetrate rapidly. Government schemes must influence ecosystem building."* — *Svati Bhogle*

Dr Jeevan Kumar Jethani (Executive Director, AREAS / Scientist F, MNRE), who formally inaugurated IDRDS 2026, offered both a reckoning and a provocation. India declared 100% village electrification in April 2018 and household-level access by 2021, a genuine achievement. But of the country's 260 GW total RE capacity, only ~30 GW is DRE. He called for the very definition of electrification to be expanded to include livelihood generation: households have light now; what

they need next is income. New DRE schemes beyond PM Kusum and Suryaghar are forthcoming, and smart metering under RDSS is quietly unlocking ~20% spare transformer capacity across the country for DRE integration.

> *"Now they need more, they need something extra. They need livelihood."* — *Dr Jeevan Kumar Jethani*

Dr Angela Lusigi (Resident Representative, UNDP India) placed the session in its starkest global frame. CO_2 emissions are still rising; projected up 1.1% in 2025; and the carbon budget window is narrowing fast. Developing nations must meet legitimate development aspirations using a fraction of the carbon space already consumed by industrialised economies. India is showing the world what it can be: ranked 3rd in solar and 4th in wind, with renewable energy growing at a 16.5% CAGR for nine consecutive years. But the national numbers only tell part of the story. In Tamil Nadu, Jayalakshmi runs a home-based tailoring enterprise powered by solar; in Nagaland, a differently-abled entrepreneur named Tsukumla doubled her monthly income with a solar sewing machine. These are the real metrics.

> *"The question is not whether we can afford this transition. It is whether we can afford not to pursue it."* — *Dr Angela Lusigi*

Mr Ashish Khanna (Director General, International Solar Alliance) delivered a bracing set of numbers and a direct challenge to India's DRE entrepreneurs. Global solar capacity doubled in just two years, with 1,000 GW added, and it is on track to double again to 4,000 GW within four years. Of that 1,000 GW, 40% was distributed renewable energy. In India, the figure is only 15%. In Africa, it is less than 3% despite the continent having the world's best solar radiation. The gap, Mr Khanna argued, is not technological; it is one of aggregation and ambition. ISA's Mission 300 ($50 billion, World Bank and AfDB) aims to provide energy access to 300 million Africans, more than half via DRE. India needs to plug in systemically — not with small one-off projects. And domestically, he looked directly at the room and asked why most DRE enterprises remain stuck in the ₹1–5 crore revenue bracket.

> *"Digitisation will fundamentally transform your business models. Why are you stuck in the 1 to 5 crore bracket, all of you?"* — *Ashish Khanna*

Dr Ashvini Kumar (Technical Advisor, Shakti Sustainable Energy Foundation) spoke from the long memory of someone who has watched DRE programmes succeed and fail over two decades. The persistent culprit, he said, was always the same: broken supply chains and lost community trust. A solar cooker whose glass cover breaks and is never replaced becomes a dressing table mirror, and the technology is written off forever. The turning point came when SECI's aggregated procurement made solar undeniably credible at scale. PM Suryaghar installed 7 GW across 25 lakh households in just 2–3 years — but only after the net metering policy was finally locked in after years of state-level flip-flopping. The prescription for DRE is the same: digitise first, then build firm contracts and firm suppliers. There are no shortcuts.

> *"If there are no firm contracts and firm suppliers, nothing is going to succeed."* — *Dr Ashvini Kumar*

Dr Arunabha Ghosh (Founder & CEO, CEEW) closed the plenary with the session's most conceptually ambitious address. We are at the end of the beginning. The long arc of India's energy access journey has reached an inflexion point, and CLEAN must now evolve from a Clean Energy Access Network into a Clean Energy Acceleration Network. He named three headwinds the sector must confront: ignorance (the risk of falling off the policy radar), irrelevance (business models must continuously upgrade), and isolation (working in silos traps enterprises in a low-income ceiling). The evidence for acceleration is already there: CEEW's Powering Livelihoods programme, run with Villgro, supported 22 enterprises across 20 states, unlocked over 35,000 livelihoods, mostly women, raised over $8 million in capital, and found that more than 90% of DRE users recorded at least a 33% income increase. The sector's story is powerful. It just needs to be told and scaled.

> *"We are at the end of the beginning. Energy is about people. Without the right leaders, the rest is academic. But with them, it could be magic."* — *Dr Arunabha Ghosh*

Recommendations and Action Items:

- Advocate with MNRE to formally notify partner ministries (Agriculture, Food Processing, Rural Development) to enable DRE-specific provisions under PMFME and AIF
- Push for carbon market rules that recognise DRE's dual mitigation and adaptation benefit
- Advocate for national reform of L1 procurement rules to allow community-level quality purchasing
- Expand and document the Mahoba multi-vendor service hub pilot for replication
- Explore an AI-powered asset registry to map installed DRE systems and unlock commercial O&M
- Collaborate with MBDA, WEFT and NBRT on a solar and mini-hydro hybrid pilot for the Northeast
- Ensure future CLEAN convenings include rural development, health and education departments, not just energy sector actors
- Help enterprises build productive use models that piggyback on PM Kusum's idle solar capacity
- Improve member data collection for richer future State of Sector Reports

Converging Policies for Scalable Distributed Renewable Energy (DRE) and Livelihoods

MC: Mr Vedant Manore, Executive Director, CLEAN

Moderator: Mr Ashish Chaturvedi, Head, Action for Climate and Environment, UNDP India

Session Overview

The session's central argument was simple and urgent: DRE will scale faster when it stops being treated as a standalone pilot and starts being embedded in the mainstream development programmes through which India actually delivers services at scale; the SRLMs, the food processing missions, the agriculture infrastructure funds. The question was no longer whether to mainstream DRE, but how, and who needs to move first.

Panelists

- Dr Priyadarshini Karve, CEO, CLEAN
- Ms Padma Jaiswal, IAS, Secretary to GNCTD, Government of Delhi
- Mr Augustus S. Suting, Additional Project Director, Meghalaya Basin Development Authority
- Mr Abhishek Jain, Director, Green Economy and Impact Innovation, CEEW
- Mr Satya Prakash Choubey, Director, Demand and Enterprise Development India, GEAPP

From the Session

Dr Priyadarshini Karve (CEO, CLEAN) opened with findings from CLEAN's State of the DRE Sector Report 2024-25, drawing on survey data from CLEAN members across the ecosystem. The headline finding was encouraging: the sector is genuinely growing, and Productive Use of Renewable Energy is its fastest-rising segment, fast catching up with the more established household energy space. Enterprises are also beginning to diversify beyond solar into wind, biomass, and hybrid technologies, and are expanding geographically — both signs of a maturing sector. The picture was not without concern, however. Most DRE enterprises remain MSMEs, predominantly self-funded, with very few having accessed carbon finance despite the clear and direct climate link. Policy support from MNRE continues to be concentrated in two technologies - PM Kusum and PM Suryaghar, leaving the wider DRE technology bouquet without equivalent backing. On the operational side, she was direct: the most pressing trust challenge is after-sales service and product durability, and the sector and its funders must stop counting systems distributed and start counting systems still in operation. To address the last-mile O&M gap, CLEAN is piloting a multi-vendor service centre in Mahoba, UP, where non-competing vendors share a single hub. She also called for a district-as-unit planning approach, with central government setting policy frameworks rather than prescriptive national targets. She closed with a longer-term argument: as India's domestic carbon market develops, the rules must be designed to recognise and reward DRE's double benefit - mitigation and adaptation together, which large centralised RE simply cannot offer.

Key Themes & Takeaways from the Plenary

- Theme 1. The language of DRE is the first barrier to convergence: Leading with "energy" gets the DRE sector filed away as a sectoral player, and the conversation ends. The DEWEE programme proved the antidote: stop leading with solar panels and start with women's economic empowerment and business modelling for livelihoods. The energy cost reduction argument then follows naturally within that framing. The reframing did not just open doors. It created an entirely new seat at the table.

"We stopped talking about energy. We started talking about the business model of whatever livelihood activity they were doing. And that clicked." — Mr Satya Prakash Choubey, GEAPP

- Theme 2. The Right Policy Exists. The Right Notification Doesn't: Convergence is happening person by person, not system by system. DRE convergence with livelihood schemes is working in pockets, but almost entirely because of one sympathetic local officer, not because the system is designed for it. CEEW worked to secretary level to establish solar eligibility under the Agriculture Infrastructure Fund. The result was a ministerial social media post, never a formal notification. Intent is not instruction, and without money flowing, nothing changes on the ground.

"Unless the money really flows, it remains only as intent. As long as intent remains intent, nothing changes on the ground." — Mr Abhishek Jain, CEEW

- Theme 3. Installed Is Not the Same as Working: After-sales service and O&M are the sector's most urgent unresolved problem The uncomfortable question the sector must face is how many of the systems distributed are still working two, three, or ten years later. Government measures success in units deployed, not units operational. CLEAN's Mahoba multi-vendor service hub is one answer. An AI-powered asset registry to map all installed systems and create commercial O&M opportunities is another that the session felt had not yet been taken seriously enough.

"Lots of systems have been distributed and numbers quoted — but how many are still in operation two, three, ten years later? That's a very uncomfortable question, but we have to take it head-on." — Dr Priyadarshini Karve, CLEAN

- Theme 4. When Communities Own It, They Build Beyond It: Community ownership and procurement reform are non-negotiable for scale. Meghalaya's solar dryer clusters went from processing one ton of ginger a day to 500 metric tons because communities owned the outcome. What breaks the model is L1 procurement. When 149 pico hydro machines were introduced through lowest-bid tendering in Meghalaya, they failed almost immediately, while quality machines installed in Odisha in 2006 still run today. The ask is straightforward: allow community-level quality procurement nationally, not only under externally-aided projects.

"Research should percolate not in publications, but in changing livelihoods." — Mr Augustus Suting, MBDA

Recommendations and Action Items:

- Advocate with MNRE to formally notify partner ministries (Agriculture, Food Processing, Rural Development) to enable DRE-specific provisions under PMFME and AIF
- Push for carbon market rules that recognise DRE's dual mitigation and adaptation benefit
- Advocate for national reform of L1 procurement rules to allow community-level quality purchasing
- Expand and document the Mahoba multi-vendor service hub pilot for replication
- Explore an AI-powered asset registry to map installed DRE systems and unlock commercial O&M
- Collaborate with MBDA, WEFT and NBRT on a solar and mini-hydro hybrid pilot for the Northeast
- Ensure future CLEAN convenings include rural development, health and education departments, not just energy sector actors
- Help enterprises build productive use models that piggyback on PM Kusum's idle solar capacity
- Improve member data collection for richer future State of Sector Reports

India–Europe Private Sector Collaboration: Building on a decade of partnerships for scaling DRE

Co-partnered by Alliance for Rural Electrification

MC: Ms Vidya Sagapam, Access to Markets, CLEAN

Moderator: Mr Deepak Mohapatra – Senior Officer, Alliance for Rural Electrification (ARE)

Session Overview

The session on India-Europe Private Sector Collaboration at the India DRE Summit 2026 highlighted a decade of successful partnerships aimed at scaling Distributed Renewable Energy (DRE). Moderated by Deepak Mohapatra (ARE), the panel featured leaders from Schneider Electric, IKEA Foundation, GSES, and CLEAN. The discussion centred on how European technological expertise and philanthropic capital are merging with Indian grassroots innovation to solve energy access challenges. Key takeaways included the shift from "pure grants" to impact investing, the necessity of modular and digitalised technology, and the role of industry associations in bridging the gap between Indian manufacturers and global markets.

Panelists

- Mr David Lecoque (Opening Remarks) – CEO, Alliance for Rural Electrification (ARE) - Joined virtually from Brussels
- Ms Meenakshi Singh – Business Development Manager, Schneider Electric
- Mr Bishwarup Banerjee – Renewable Energy Program Manager, IKEA Foundation
- Mr Dweepen Borua – Managing Director, Global Sustainable Energy Solutions (GSES)
- Mr Nitin Akhade – President, CLEAN; Executive Director, Customised Energy Solutions (CES)

Key Themes & Takeaways from the Plenary

- **Theme 1: Partnership as "The New Infrastructure":** The session redefined partnerships not just as networking, but also as the foundational infrastructure required to scale DRE. A primary example cited was the collaboration between IIT Bombay (India), Promethean (India), and Littleson (Germany) to deploy instant milk chillers in Zambia, demonstrating how Indo-European tech can solve global last-mile agricultural problems.
- **Theme 2: Digitalisation and EcoStruxure:** Schneider Electric highlighted the adaptation of European digital infrastructure, specifically EcoStruxure, to the Indian DRE market. Beyond remote monitoring, such digital tools also track socio-economic metrics like the number of farmers served and hectares irrigated, providing the "impact data" that international funders require to assess the projects.

- **Theme 3: Evolution of Philanthropy to Impact Investing:** The IKEA Foundation shared its journey from funding small pilots in 2018 to large-scale ecosystem support in 2026. A key transition is moving from pure grants to debt and equity, helping budding DRE enterprises bridging the "early-stage financing" gap while focusing on massive projects like solarising 25,000 health clinics.
- **Theme 4: The Skill-Technology Gap:** A significant barrier identified was the lack of local technicians to maintain sophisticated European-designed systems. ARE and CLEAN are addressing this through the CORE (Cornerstone of Rural Electrification) program, which will provide demand-driven TVET training opportunities to ensure local expertise to repair and maintain DRE assets. Youth and women groups will be focused on inclusivity.
- **Theme 5: Standardisation and Biomass Potential:** While solar is the "low-hanging fruit," the panel noted that Europe is far more advanced in standardised biomass pelletization. India currently struggles with variable biomass fuel quality; adopting European automated feeding and pelletization standards could unlock a massive "process heat" market for Indian MSMEs.
- **Theme 6: Joint Market Access:** The vision for the future involves "matchmaking clinics" between ARE and CLEAN members. European firms provide sophisticated hardware and smart controllers, while Indian firms provide field-ready, cost-effective integration. This synergy allows both regions to jointly target the $100 billion market potential in Africa and Southeast Asia.

Recommendations and Action Items

- Launch a Joint "Market Access Clinic": In partnership with ARE, host digital matchmaking sessions where Indian DRE members can pitch to European manufacturers for joint ventures or distribution rights in the African continent.
- Develop a "DRE Diagnostic App": Building on GSES's suggestion, CLEAN should scale a mobile app for field technicians that uses step-by-step logic to diagnose and solve common off-grid system failures, reducing the need for expensive site visits.
- Establish Voluntary DRE Standards: Collaborate with European partners to contextualise IEC/ISO standards for the Indian "Productive Use" market (e.g., standardising parameters for solar oil expellers or hammer mills) to increase bankability.
- Co-host Regional Financing Workshops: Along with national events, organise regional/State-level "Banker Sensitisation" workshops to help local bank managers and staff understand DRE risk profiles and unlock regional credit lines.
- Adopt the CORE Certification: Implement the ARE-developed CORE training modules across CLEAN's member network to provide an internationally recognised quality stamp for Indian DRE installers.
- Advocate for "Soft Capital" Retention: Engage with European foundations to ensure that while capital moves toward Africa, India remains a primary hub for Innovation Grants, recognising that many challenges here are still only partially addressed.

Women in DRE: From Practice to Policy

MC: Ms Mrunmayee Thatte, Climate Finance Associate, CLEAN

Moderator: Ms Rekha Krishnan - Founder and Managing Director, Water Energy Food Transition (WEFT)

Session Overview

This session was the dedicated Women in DRE plenary of Day 1 of the India DRE Summit 2026. The session convened at the close of the day and featured a diverse panel of women leaders - grassroots entrepreneurs, civil society practitioners, researchers, and financiers - all connected to the Distributed Renewable Energy ecosystem. The session sought to move beyond treating women as beneficiaries and reframe them as innovators, entrepreneurs, and leaders in the DRE space. The discussion covered personal experiences of women in leadership, programmatic approaches to women's empowerment through DRE, financing models for rural women entrepreneurs, the role of technology and skilling, and policy considerations for gender-inclusive DRE deployment.

Panelists

- Ms Vibha Dhawan - Director General, The Energy and Resources Institute (TERI)
- Ms Kalpana Khare - Director, Gramonnati
- Ms Smita Ram - Co-Founder, Rang De
- Ms Upasna Jain - Chief of Staff, Resham Sutra Private Limited
- Ms Hichila Chang - Eden Resource Centre, Tuensang, Nagaland
- Ms Shila Jagtap - Tech Promoter, Sakhi Unique Resource Enterprise, Maharashtra

Key Themes & Takeaways from the Plenary

- **Theme 1: From Beneficiaries to Entrepreneurs:** The most prominent theme across all speakers was the evolution of the language and framing around women in DRE. The session collectively endorsed a shift from treating women as passive beneficiaries of energy access to recognising them as end users, entrepreneurs, and leaders in their own right. This shift requires not just technology deployment but full ecosystem support, including skilling, market access, financial linkage, and community mobilisation.
- **Theme 2: Time Poverty as a Structural Barrier:** Multiple speakers identified time poverty - the disproportionate burden on women for fuel collection, water collection, cooking, and domestic work - as a foundational barrier to women's economic and social participation. DRE interventions that reduce this burden (cleaner cooking, solar water pumping, efficient food processing) are therefore not only energy interventions but social and gender equity interventions.
- **Theme 3: DRE Enables Income Diversification:** Concrete case studies from Nagaland, Maharashtra, Meghalaya, and Bundelkhand demonstrated that DRE-powered equipment (food processors, tailoring machines, cold storage, solar sprayers) enables women to generate income from food processing, textile production, agricultural services,

and school uniform manufacturing - diversifying household income and reducing dependence on male earnings or seasonal agriculture.

- **Theme 4: Finance as a Critical Enabler and Gap:** Access to affordable credit remains a major barrier for rural women entrepreneurs. Two complementary models were highlighted: Rang De's P2P lending platform (democratising access to formal credit and building credit scores) and the call for revolving working capital funds to sustain DRE installations beyond the initial deployment phase. Data-driven approaches to documenting women's creditworthiness and repayment behaviour were identified as essential to overcoming institutional biases.
- **Theme 5: Convergence and Collaboration:** The most successful models described - Resham Sutra in Meghalaya, Rang De's women's fund with UN Women, SEWA's climate entrepreneur programme - all resulted from intentional convergence of multiple actors: NGOs, government rural livelihood missions, CSR funders, technology providers, and financial institutions. The session reinforced that no single actor can solve the women-DRE challenge alone.
- **Theme 6: Women as Problem Solvers, Not Just Recipients:** Across the session, women were described as natural scientists, optimisers, and storytellers. The session reinforced that when women are placed at the centre of problem identification - not just technology adoption - the chances of sustainable, contextually appropriate DRE solutions increase substantially. Women's grassroots knowledge of local challenges should be the starting point of DRE programme design.

Recommendations and Action Items:

- Avoid a single broad 'women in DRE' policy; instead, build gender responsiveness into sector-wide DRE policies by recognising the diversity of women's contexts, roles, and geographies.
- Integrate DRE into existing women's empowerment programmes (SHGs, Gram Sabha, rural livelihood missions) rather than creating parallel silos.
- DRE governance should be decentralised - demands and solutions should emerge from the Gram Sabha level, as illustrated by the example of a DRE-powered millet processing unit sanctioned through the Gram Sabha in a tribal district.
- Project funding should include at least 2 years of O&M costs, not just installation capital.
- Move the sector from anecdotal success stories to systematic data collection and reporting on women's DRE outcomes - creditworthiness, repayment rates, enterprise formation - to build an evidence base that can influence mainstream finance.

India–Africa Development Partnership for Distributed Renewable Energy (DRE): From Policy Collaboration to On-Ground Impact

Co-Partnered by : UNDP India

MC: Ms Vidya Sagapam, Access to Markets, CLEAN
Moderator: Mr Thomas Pullenkov – Advisor, Village Empowerment Inc.

Session Overview

The session on India-Africa Development Partnership for Distributed Renewable Energy (DRE) was a high-level plenary that explored the strategic alignment between India's mature DRE ecosystem and Africa's current energy transition. Moderated by Thomas Pullenkov, the discussion brought together international development agencies, technology providers, and investors to move the dialogue from high-level policy collaboration to practical on-ground impact. The central goal was to identify how India's 20 years of experience in rural electrification can be leveraged to accelerate universal energy access in Africa, specifically focusing on livelihoods, bankable business models, and South-South cooperation.

Panelists

- Mr Dilip Singh – National Project Manager, UNDP India
- Mr Barakat Ahmad – Regional Programs Head (Africa), International Solar Alliance (ISA)
- Ms Mukabandji Mutanukha – Country Coordinator, SEforAll, Zambia
- Mr Shriyamsa Bayrikanjan – CEO, Energeva Ventures
- Mr Prashant Motwani – Country Director (India), Odyssey Energy Solutions
- Mr Olu Oroke – Country Director, Husk Power Systems, Nigeria (Joined Online)

Key Themes & Takeaways from the Plenary

- **Theme 1: Shift from Advocacy to Implementation:** A recurring sentiment was that Africa has moved beyond the need for feasibility studies and academic reports. The continent is now in an "implementation mood," seeking partners who bring proven, field-tested solutions. The USP of the Indian DRE sector is its credible history of delivering energy solutions to millions in rural, often agrarian, settings—a reality that mirrors the current challenges in Sub-Saharan Africa.
- **Theme 2: The "Three Pillars" of Scalability:** The International Solar Alliance (ISA) emphasised that scaling DRE requires three components to move in unison: Policy (to attract private sector interest), Finance (to provide bankable structures), and Local Capacity (to ensure long-term sustainability and maintenance). Without this combination, technology deployment remains stagnant or unsustainable.

- **Theme 3: Adaptation Over Replication:** While technical systems (mini-grids, solar pumps) are similar across geographies, business models must be adapted to local socio-cultural norms. In Nigeria, for instance, the presence of heavy diesel generator usage and specific religious or agrarian calendars dictates how power is consumed. Successful models, like Husk Power's, demonstrate that "rural service" must be tailored to community-specific behavioural insights.
- **Theme 4: Financing and De-risking Capital:** Financing remains the most significant barrier. The discussion highlighted the success of programs like Nigeria's DARES ($750M World Bank initiative), which uses Results-Based Financing (RBF) to de-risk private capital. Innovative tools like Equipment Credit Facilities were proposed to address the bankability gap by using inventory as collateral rather than traditional land-based assets.
- **Theme 5: Technology as a Transparency Tool:** India's leadership in the digital economy offers a unique opportunity for Africa. By integrating IoT and Remote Monitoring Systems (RMS) into DRE assets, developers can provide financiers with real-time data on asset performance. This digital transparency reduces perceived risk and ensures that minor technical failures do not lead to total project abandonment.
- **Theme 6: The "Ecosystem" Approach vs. "Product" Sales:** The panel rejected the idea of India simply being a "product supplier." Instead, the partnership must be an ecosystem exchange. This includes transfer of expertise in Productive Use of Energy (PUE), where energy is paired with machinery (flour mills, cold storage) to create thriving local economies, rather than just providing lighting.

Recommendations and Action Items

- Establish a Technical & Transactional Bridge: CLEAN should evolve from a networking platform into a bridge that facilitates actual transactions, helping its members navigate the high costs and long timelines of reaching "financial close" in African markets.
- Develop a "Green Gateway" to Africa: Create a two-way channel for trade and expertise sharing. This includes conducting an Indo-Africa mapping exercise to identify investable projects and local partners.
- Promote South-South Knowledge Repositories: Work with agencies like UNDP and ISA to become a repository for DRE data and documentation, moving from anecdotal success to evidence-based reporting on creditworthiness and repayment.
- Focus on Projectization: Move beyond general collaboration toward specific "projectized" efforts, such as the Africa Solar Facility, to create clear entry points for Indian MSMEs.
- Incorporate Operations & Maintenance (O&M): Ensure that new partnership models include at least 2 years of O&M funding to prevent the "install and forget" failure cycle.
- Prioritise Women-Led Entrepreneurship: Explicitly integrate gender-responsive strategies into Indo-Africa DRE programs, recognising that women often bear the face of energy poverty and are the primary drivers of rural economic stability.

Streamlining Financing for DRE

Co-partnered by WRI India

MC: Ms Mrunmayee Thatte, Climate Finance Associate, CLEAN

Moderator: Ms Pamli Deka - Program Head – Energy Transition Finance, WRI India

Session Overview

Session on Streamlining Finance for DRE focused on a critical systemic challenge in the DRE sector: why promising projects often struggle to access finance — not because the technology itself fails, but because of structural issues, including missing data, unclear ownership, revenue streams that are difficult to underwrite, and weak utilisation rates. Co-organised by WRI India and CLEAN, the session brought together grassroots implementers, microfinance institutions, small finance banks, and a philanthropic funder to examine what business models and performance signals actually unlock capital, and how finance can capital flow in sync with on-ground realities.

Panelists

- Mr Piyush Sharma – CEO, Sanjog
- Mr Ganesh Neelam – Director, Sustain Plus
- Mr Ramakrishna NK – Co-founder & MD, Rang De
- Mr John Inchkalody– Associate Director of Programs, ESAF Foundation
- Ms Mahenaw Wara – Program Manager, Good Energies Foundation

Key Themes & Takeaways from the Plenary

- **Theme 1: End Users Are Often Creditworthy but Remain Insufficiently Served:** The most powerful message from the session was that communities may not be inherently high-risk borrowers; but sometimes they are inadequately served by a financial system that may not have not adapted well to their contexts. Rang De's P2P model, Sanjog's experience with Eri spinners, and ESAF's clean energy product all demonstrate that with appropriate product design, repayment rates can be high. The problem is structural: financial institutions have digitised their processes without innovating their underlying underwriting criteria.Requirements around collateral, formal land titles, and standard minimum ticket sizes reflect lending frameworks developed for urban, middle-income borrowers, which do not always align with the realities of rural and grassroots communities.
- **Theme 2: The Subsidy Conundrum- Balancing Support and Market Growth:** A recurring observation has been that subsidy-driven models, where 80–90% of DRE system costs are covered by government, have sometimes unintentionally slowed the emergence of a sustainable DRE market. When systems are installed mainly to access subsidies, without strong demand, business planning, or clear usage intent, they risk remaining underutilized. This can lead to a cycle in which idle systems generate little revenue, repayment records are weak, lenders hesitate to

engage, and genuine demand struggles to find financing. The way forward may not lie in removing subsidies altogether, but in reshaping them to be more demand-responsive, linked to demonstrated utilisation, and supported by O&M commitments, so that they strengthen both access and long-term market confidence.

- **Theme 3: Philanthropy as Catalytic First Capital — But Not Sufficient Alone:** Philanthropic capital was recognised as indispensable for the DRE sector — as the first-risk taker, proof-of-concept funder, and de-risking instrument that unlocks commercial capital. The FLDG model (Switch ON Foundation), the Swavlamban Challenge Fund (Resham Sutra), and Good Energies' programme partnerships all demonstrate how well-structured grants can catalyse larger pools of commercial capital. However, the session also acknowledged philanthropy's limitations: grant cycles are short, reporting frameworks are fragmented, and philanthropic capital alone cannot achieve the scale of financing needed. The sector urgently needs the transition from proof-of-concept (grant-funded) to program-induced scale (blended) to market-driven scale, and each stage requires a different mix of capital instruments.
- **Theme 4: The O&M Gap, A Critical Missing Piece:** Multiple speakers from both the financing and implementation sides identified operations and maintenance (O&M) as one of the biggest gaps challenging both DRE sustainability and investor confidence. When solar systems fail and no local technician is available, communities lose income, repayment motivation disappears, and lenders record NPAs. Financing confidence is directly correlated with O&M confidence. The sector must develop local O&M capacity as an integral and funded component of every DRE deployment, not as an afterthought. This requires both the inclusion of O&M costs in project budgets and the development of rural entrepreneur-led O&M business models.
- **Theme 5: Value Chain Integration Over Technology Push:** The session consistently reinforced that DRE cannot be sold to communities as a standalone technology. It must be embedded within value chains including dairy, agriculture, textiles, food processing, where its impact on income, productivity, and cost reduction is clear and demonstrable. This means starting from the value chain and asking 'where can DRE add productivity and efficiency?' rather than starting from the technology and asking 'who can we deploy this to?' The Sustain Plus–NDDB dairy partnership was cited as an example for this approach, where DRE integration into a well-established value chain creates immediate beneficiary pull rather than supply-side push.
- **Theme 6: Visible Data and Standardised Frameworks Are Non-Negotiable:** A clear consensus emerged that the sector's inability to attract institutional capital is not solely due to risk ; it is also due to invisibility. Viable DRE models exist, but they are not visible in a format that commercial lenders understand and trust. Standardised impact metrics, homogeneous reporting frameworks, and sector-wide databases of repayment performance, income-generating outcomes, and technology utilisation rates are essential infrastructure for DRE financing at scale. CLEAN and WRI India were specifically called upon to lead the development of these standards and to champion their adoption across the sector.

Recommendations and Action Items:

- Develop standardised DRE impact metrics and reporting frameworks to reduce the capacity-building burden on individual organisations and make the sector legible
- Increase documentation of performance of DRE systems and communication of DRE success stories by CLEAN, WRI India, and partners to build confidence among both financiers and end users.
- Explore the potential for FLDG de-risking models across more DRE products and geographies, building on the switch ON Foundation's solar irrigation experience.

- Engage philanthropic capital based on where economics of the service delivery model demand it, independent of whether the provider is an NGO or a for-profit social enterprise, particularly for rental and pay-per-use structures that reduce adoption risk for end users.
- Redesign subsidy architecture for remote geographies in consultation with CLEAN, so that subsidies are linked to genuine demand, utilisation, and O&M sustainability — not just procurement.
- Strengthen NRLM/SRLM–DRE integration, ensuring CLF-level financing can accommodate higher ticket sizes for DRE assets and that disbursement speed improves.
- Shift Mindset of end users on financing by encouraging them to move away from dependence on grants and subsidies, fostering ownership and responsibility.

Powering MSMEs through Distributed Renewable Energy Solutions

Co-Partnered by Centre for Study of Science, Technology and Policy (CSTEP)

MC: Ms Vidya Sagapam, Access to Markets, CLEAN

Moderator: Mr Sharath Rao – Research Fellow, CSEP; Board Member, CLEAN

Session Overview

The session on Powering MSMEs through Distributed Renewable Energy Solutions took place as a critical plenary during the India DRE Summit 2026. Moderated by Dr Sharath Rao, Board Member, CLEAN, the session brought together a diverse group of practitioners, government officials, and think-tank experts to discuss the integration of DRE into the Micro, Small, and Medium Enterprises (MSME) sector. The discussion highlighted that while MSMEs contribute nearly 30% of Gross Domestic Product (GDP) and support over 110 million livelihoods, they face structural challenges in productivity and high energy costs (5%–20% of operating expenses). The session aimed to explore technology, finance, and policy levers to foster a robust DRE-MSME ecosystem, moving from simple energy access to industrial-scale productivity enhancements.

Panelists

- Ms Shelly Kerketta – General Manager, Mlinda Charitable Trust
- Mr Samit Jain – Director, Pluss Advanced Technologies Ltd. (Murugappa Group)
- Mr P. Shyam Sunder – Director, Bureau of Energy Efficiency (BEE), Ministry of Power
- Dr Srinivas Shroff Nagesha Rao – CEO, AIC-CV Raman College of Engineering; Former CEO, REC Foundation
- Mr Saptak Ghosh – Sector Head (Renewables), Centre for Study of Science, Technology and Policy (CSTEP)

Key Themes & Takeaways from the Plenary

- **Theme 1: MSMEs as Engines of Local Employment:** MSMEs are India's second-largest employer after agriculture and a major source of non-farm employment. They play an important role in supporting livelihoods in rural, semi-urban, and backward areas, thereby helping reduce regional imbalances and migration pressures. The session emphasised that powering these units with DRE does not just reduce energy costs; it can also strengthen local economic resilience.
- **Theme 2: Beyond Electricity—The "Process Heat" Opportunity:** A major technical takeaway was that industrial energy demand is split between electricity and process heat. The current methods used to convert electricity into heat are often highly inefficient. The panel advocated solar thermal solutions and Concentrated Solar Heat (CSH) for applications such as laundry, pharmaceuticals, and tobacco drying.

- **Theme 3: Thermal Energy Storage (TES) vs. Battery Storage:** While lithium-ion is a popular storage medium, storing “cold as cold” or “heat as heat” using Phase Change Materials (PCM) can be more efficient for cooling-intensive MSMEs. Examples included nighttime cold storage in Europe and India’s potential for 24-hour solar dryers that maintain constant temperatures.
- **Theme 4: The Cluster-Based Ecosystem Model:** Mlinda’s success in Jharkhand demonstrated that DRE works best when integrated into a whole-of-economy approach. Rather than building a grid and then searching for customers, the model identifies underserved activities (such as millet processing and milling or wheat flour milling or welding), builds the entrepreneurship pipeline first, and then provides 24/7 reliable DRE as enabling infrastructure.
- **Theme 5: Agri-Photovoltaics (Agri-PV) as a New Frontier:** CSTEP presented high-potential models for Agri-PV, where solar energy is used to power value-added MSMEs such as piggery processing in Manipur, medicinal herb-based products in Barwani (MP) or apple-cider production in Kashmir. This allows the local community, women-led SHGs or entrepreneurs to develop an additional income source or improve an existing revenue stream. This, in turn, transforms farm economics and livelihoods.
- **Theme 6: Government Financing & Handholding:** The Bureau of Energy Efficiency (BEE) highlighted the Assistance in Deploying Energy Efficient Technologies in Industries and Establishments (ADEETIE) Scheme, which provides an interest subvention of up to 5% for MSMEs adopting energy-efficient technologies. A critical realisation was that MSMEs need “continuous handholding” through the audit, implementation, and verification stages, rather than just a one-time financial subsidy

Recommendations and Action Items

- Facilitate R&D Interventions: R&D grants focused on industrial DRE applications, such as high-temperature solar thermal, are the need of the hour to reduce the initial capital burden on MSME innovators. MSMEs spend a significant portion of their existing revenue on R&D, but since R&D can often be hit or miss, such support would be both welcome and important for their survival. CLEAN should channel its efforts in this direction.
- Bridge the "Trust Gap" in Agri-PV: Develop legal and financial frameworks to mitigate risks between farmers and solar developers, thereby ensuring wider dissemination and adoption of Agri-PV.
- Piggyback on Existing Government Schemes: CLEAN members should utilise BEE’s ADEETIE initiative and UNIDO’s upcoming $10 million decarbonization project for 14,000 factories.
- Engagement of "Pay-Per-Use" (ESCO) Models: For seasonal agri-MSMEs, such as tomato drying, CLEAN should encourage members to adopt ESCO or “petrol pump” models, where farmers pay only for the energy they use during the harvest period.
- Promote Thermal Storage Standards: Encourage the adoption of thermal storage materials in cold-chain logistics and promote this as a new form of intervention. This would be another important addition to DRE interventions, which India could eventually export to other nations.
- Organise Follow-up Action Workshops: CLEAN and CSTEP will host a dedicated workshop to promote the DRE-MSME intervention roadmap, with specific “to-dos” and practical guidance on implementation based on on-ground realities, for presentation to the Ministry of Power.

Future-Ready Workforce for DRE & Clean Energy

Co-Partnered by NRDC India

MC: Ms Mrunmayee Thatte, Climate Finance Associate, CLEAN

Moderator: Rana Pujari, Lead Renewable Energy, NRDC India

Session Overview

The session brought together government, civil society, industry, grassroots practitioners, and training institutions to examine a core question: as India targets 3.5 million green jobs by 2030 and accelerates DRE deployment across villages and remote geographies, does it have or can it build a workforce equipped to deploy, operate, maintain, and scale these technologies sustainably? The session examined how DRE O&M capacity is being built at the last mile; how NSDC's national skilling architecture can be oriented toward DRE demand; how AI and digital tools are being used to create creditworthy rural entrepreneurs; and what the industry requires from a trained DRE workforce.

This session began with opening remarks from Ms Dipa Singh Bagai, Country Director, NRDC India, followed by a special address from Dr Sangita Kasture, Scientist G, Ministry of New and Renewable Energy,, and the formal launch of the NRDC–SEWA joint Climate Entrepreneurship Factsheet, presented by Mr Devesh Shah, Director, SEWA and climate educator Ms Anjali, SEWA sister, and lastly a panel discussion bringing together skilling institutions, grassroots organisations, and community trainees.

Panel Discussion

Speakers

- Ms Ekta Jaju – Executive Director, SwitchON Foundation
- Ms Bhumika Malhotra – General Manager, Government Programs, National Skill Development Corporation (NSDC)
- Dr Panchalee Tamulee – Chief of Staff, CEO's Office, Dharmalife
- Mr Manoj Kumar Gupta – CEO, Tata Power Renewable Microgrid Limited
- Ms Kajal Vaghela – Climate Educator, SEWA (translation support by Mr Bryan Macwan, GTNfW, SEWA)

Key Themes & Takeaways from the panel discussion

· **Theme 1: Capacity Building Is Infrastructure, Not a Supplement to It:** The most insistent theme was that skilling and capacity building must be reconceived as primary infrastructure — as fundamental to DRE success as solar panels, inverters, or batteries. When DRE systems are installed without local O&M capacity, they become high-cost infrastructure that degrades over time, erodes community trust, generates NPAs for lenders, and produces no lasting impact. Every case study presented — from SwitchON's 20-year community servicing journey to Tata Power's pre-commissioning model — reinforced that the sequence must be: skill first, deployment second. The habit of treating skilling as an afterthought — the last budget line in a project plan — is the single most preventable cause of DRE project failure.

· **Theme 2: Decentralization of Skills, Not Just of Energy:** India's current skilling infrastructure is heavily centralized: training centres exist in metro areas and district headquarters, while DRE deployment is pushing into the most remote corners of the country. This geographic mismatch is not a minor inconvenience — it is a structural barrier. The DRE sector needs to decentralise skilling just as aggressively as it is decentralising energy. Technologies such as AI-enabled LMS platforms (Dharma Life), app-based learning (MNRE), hub-and-spoke training networks (Tata Power), and community-embedded trainer models (SwitchOn) are already demonstrating that this is possible. What is missing is the mandate, the funding, and the institutional architecture to take these innovations from pilots to programmes at a national scale.

· **Theme 3: Skill Development as a Financial Inclusion Pathway:** Dharma Life's presentation introduced one of the most innovative ideas in the entire summit: that capacity building is a pathway to financing. The model — where learning history, training completion scores, and performance metrics are tracked through an AI-enabled, blockchain-secured platform that translates into creditworthiness evidence for banks and NBFCs — reframes skills from a development input into a financial asset. This is particularly powerful for rural women with no formal credit history. By demonstrating consistent learning behaviour and business performance over time, a trained DRE entrepreneur becomes a documentably creditworthy borrower. If scaled, this model could systematically unlock the financing that has so far eluded the DRE end-user segment.

· **Theme 4: Women Are the Workforce But the System Is Not Designed for Them:** The final plenary spoke about women — as entrepreneurs, as climate educators, as trainees, as potential technicians. The statistics are stark: women are 11% of India's RE workforce, far below an already-inadequate global benchmark of 32%. DRE is uniquely positioned to change this because its local and decentralised character does not require women to leave their communities for distant employment. Yet the system — vocational training institutions with inadequate safety and sanitation facilities, OEM warranty processes that require long waits, financial products with no climate-shock provisions, and corporate hiring practices that default to male technicians — is not designed for women's participation. The sector must move from aspiration ('women are ideal for DRE') to design ('our systems are designed for women to succeed').

Theme 5: Industry Must Lead But Cannot Go Alone: The session arrived at the same conclusion through different paths: industry must be the frontrunner in driving DRE workforce development. Government provides structure, standards, and funding; civil society reaches communities; training institutions deliver curricula. But industry owns the demand signal — it knows what skills are needed, at what scale, in which geography, and when. Without clear, consistent demand articulation from the industry, every other skilling effort risks missing the mark. At the same time, the industry

cannot create a training ecosystem alone. The session reinforced that the model, which works, is one of genuine co-investment: industry co-designing curricula (as Tata Power did with MNRE/NCVT), co-funding training (through CSR and direct investment), and committing to absorb trained workers into productive employment.

· **Theme 6: Revenue-Sharing and Performance Incentives as Retention Tools:** One of the most practically actionable insights from the panel was Tata Power's 'partner in success' model — where local microgrid O&M operators receive a share of system revenue, with higher performance yielding higher income. This single design choice has driven continuous upskilling: workers have an intrinsic motivation to improve, because better skills directly translate to higher earnings. This model addresses what has been the chronic weakness of government skilling programmes — training people without giving them a reason to remain in the sector and keep growing. Incentive-aligned models that tie worker income to system performance are a template the entire DRE sector should adopt.

· **Theme 7: The Subsidy-to-Sustainability Transition Requires Certified, Locally Embedded Technicians:** The closing note reinforced a message that had appeared throughout the summit: the DRE sector's transition from subsidy-dependent deployment to genuinely sustainable market models is impossible without locally embedded, certified, and incentivised O&M technicians. A system that fails and cannot be fixed within days will lose community confidence. A loan that cannot be repaid because the income-generating system broke down becomes an NPA. A carbon credit that cannot be verified because O&M records are absent is a lost revenue opportunity. Every sustainability pathway in DRE runs through the local technician. Building that workforce — in scale, with quality, with gender inclusion, with continuous upskilling — is the defining human capital challenge of India's clean energy transition.

Recommendations and Action Items:

- Mandate O&M infrastructure alongside technology deployment: Every government DRE scheme must include a funded component for local servicing capacity — treating O&M as a priority deployment requirement, not a voluntary add-on.
- Integrate SRLMs (State Rural Livelihood Missions) with state energy and RE departments: The existing SHG (Self-Help Group) networks managed by SRLMs are the most ready-made vehicle for DRE O&M training at the community level. Structural convergence between these departments should be formalised and coordination should be strengthened with shared mandates.
- Adopt 'skilling as project input' planning across the sector: DRE projects — both government and private — should begin skill assessment and local recruitment 4–6 months before commissioning, not after installation.
- Scale Dharma Life's AI+blockchain creditworthiness model: The model linking learning performance to credit scores offers a replicable pathway for unlocking financing for rural women DRE entrepreneurs. CLEAN and sector partners should document and disseminate this model.
- Push OEMs to train and certify community-level repair technicians: Warranty servicing delays erode community trust in DRE products and climate entrepreneurs. OEM certification of local climate entrepreneurs for basic product repairs should become a standard condition of distribution partnerships.

CLEAN DRE Awards

Overview

The CLEAN DRE Awards 2026 were held to celebrate the pioneers of the Decentralised Renewable Energy (DRE) ecosystem. The ceremony honoured individuals and institutions whose leadership, innovation, and commitment have significantly advanced sustainable energy access in India and the Global South. By spotlighting these role models, CLEAN aims to encourage the replication of successful models and strengthen the systemic infrastructure of the DRE sector.

Award Categories and Awardees

Category 1: DRE Woman of the Year

Recognises women leaders who have driven significant impact and served as inspirations within the DRE space.

- Awardees: **Ms Alma Ekka, Rani Urja Mandala**
  Ms Sashimongla Sangtam, A&D Solar

Category 2: Innovation of the Year – DRE Sector

Honours breakthrough technological, financial, or business model innovations that address critical systemic challenges.

- Awardee: **Mr Sudhakar Babu Gariganti, Svabag Labs**

Category 3: Entrepreneur of the Year – DRE Sector & Northeast

Celebrates leaders with a strong vision for enterprise building and impactful regional work.

- Awardees (DRE Sector - Jointly Conferred): **Mr Mohan Hegde, SELCO Solar**
  Ms. Vaibhavi Patil, Sistema.bio
- Awardee (Northeast): Mr Fazle Muztaba, Envo RE Services

Category 4: Start-up of the Year – DRE Sector

Acknowledges young enterprises demonstrating early traction, novelty, and high growth potential.

- Awardee: **Mr Dewansh Poddar, EV Recharge**

Category 5: CSO of the Year – DRE Sector

Recognises Civil Society Organisations that enable last-mile energy access and inclusive community development.

- Awardee: **Mr Shishir Singh, PCI**

Special Award: Outstanding Contribution to the DRE Sector

Recognising individuals who have shaped the DRE ecosystem at a systemic level through long-standing policy and finance work.

- Awardees: **Dr Jeevan Kumar Jeethani, MNRE (Policy Leadership)**
  Mr Ramakrishnan N. K., Rang De (Financial Innovation)

Evaluation Criteria Overview

The selection process followed a rigorous evaluation framework tailored to each specific category:

- Woman of the Year: Focused on measurable results in communities served, strategic leadership and mentoring, the introduction of new problem-solving ideas, clear actions toward gender equity, and a clarity of vision for future scaling.
- Innovation of the Year: Evaluated based on the novelty of the technical or business solution, data-backed evidence of cost savings and reliability, financial viability, readiness for real-world deployment in last-mile contexts, and evidence of market demand.
- Enterprise of the Year: Measured by the depth of PURE/DRE deployments and livelihood outcomes, the strength of implementational partnerships, integration of social inclusion and governance, contribution to market transformation, and alignment with national energy goals.
- Start-up of the Year: Assessed on the appropriateness of the solution design for underserved markets, clarity of the problem being addressed, evidence of early user traction, the execution capability and ethical values of the founding team, and long-term ecosystem potential.
- CSO of the Year: Focused on mission responsiveness to community gaps, the quality of engagement with government and financiers, depth of capacity building and after-sales support, and potential for broader policy influence or knowledge dissemination.

The 2026 ceremony concluded with a warm round of applause for the awardees, whose work reflects the resilience and spirit of the sustainable energy movement. By honouring these achievements, CLEAN continues to foster an environment where clean energy is not just a technological alternative, but a vehicle for inclusive development and economic empowerment.

Investment Matchmaking Program

Overview

The Investment Matchmaking Session held on 10–11 February brought together a dynamic cohort of climate-tech entrepreneurs and forward-looking investors in a focused two-day dialogue. The session served as a powerful bridge, connecting innovative businesses working at the intersection of clean energy, agriculture, and rural development with capital partners aligned with impact-driven mandates.

Spanning nine distinct sectors, the participating enterprises demonstrated the breadth and depth of India's emerging green economy — from solar-powered cold storage for smallholder farmers to methane-to-hydrogen technology and battery swap mobility solutions.

Capital Needs & Investment Dialogue

Participants presented diverse and well-articulated capital requirements, reflecting the varied stages of their enterprise journeys. The session facilitated structured conversations around four key capital categories:

Long-Term Capital	Scaling operations, expanding infrastructure, commercializing pilot technologies, and setting up manufacturing units.
Short-Term Capital	Pilot projects, end-user financing, and small expansion requirements (₹40–50 lakhs range).
Project Financing	Client-side financing for MSMEs lacking upfront capital — enabling last-mile adoption of clean technologies.
CSR / Grants	Impact-focused and rural livelihood projects seeking early-stage scaling and demonstration support.

Investor Engagement: A Promising Start

Investor interest was palpable throughout the two days. Across most interactions, investors expressed genuine curiosity and engaged participants in substantive discussions. The common outcomes of these conversations included:

- Investors requesting detailed project documents and financial statements for internal review
- Specific requests for follow-up meetings and further clarifications
- Expressions of interest in co-investing or exploring blended finance structures
- Constructive feedback on what would strengthen the investment case

While immediate funding commitments were not the primary objective of this matchmaking format, the quality of dialogue exceeded expectations and set the stage for promising follow-on conversations.

What Participants Gained

Feedback from participating enterprises was overwhelmingly positive. Beyond the prospect of capital, participants walked away with a wealth of intangible but invaluable insights:

- A clear understanding of investor expectations, due diligence criteria, and documentation standards
- Identification of internal organisational gaps to address before the next fundraising round
- Market validation — hearing directly from investors affirmed the relevance of their solutions
- Expanded professional networks across the climate-tech and impact investing ecosystem
- Sharpened pitch narratives and stronger fundraising readiness for future opportunities

Several cross-cutting themes emerged as areas of strong investor interest and potential alignment:

Rural Development & Agriculture Post-harvest loss reduction, cold chain access, and farmer income security.	**Clean Energy Access** Distributed solar, BESS, and mobility solutions for underserved communities.
Climate Mitigation Green hydrogen, bioplastics, biomass cooking, and circular economy solutions.	**Sustainable Livelihoods** Women-led enterprises, MSME financing, and inclusive economic growth pathways.

The Road Ahead

The Investment Matchmaking Session has laid a strong foundation. Participants depart with renewed clarity, better-prepared pitch materials, and concrete investor relationships to nurture. The momentum generated over these two days is a testament to the growing convergence between impact capital and climate entrepreneurship in India.

The organising team will continue to support participants with follow-up facilitation, ensuring that the conversations sparked here translate into tangible investment outcomes. The pipeline of enterprises showcased reflects the extraordinary potential of India's climate innovation ecosystem and this session marks just the beginning.

Exhibition

Overview

The exhibition at the 5th India Distributed Renewable Energy Summit (IDRES) 2026 served as a premier showcase for the Decentralised Renewable Energy (DRE) sector. Bringing together a diverse spectrum of stakeholders—including manufacturers, investors, and policymakers—the exhibition highlighted innovative technologies designed to bridge the energy access gap and foster rural livelihoods. The 2026 showcase underscored a significant shift toward Productive Use of Energy (PUE), focusing on how DRE can directly enhance agricultural and industrial productivity.

Inauguration & High-Profile Visits

The exhibition was officially inaugurated by a distinguished panel of leaders from the global and national energy landscape, signalling the high-level commitment to the DRE movement:

- Shri. Nitin Akhade, President, Clean Energy Access Network (CLEAN)
- Smt. Svati Bhogle, Founding Chairperson, Clean Energy Access Network (CLEAN)
- Shri Pralhad Joshi, Cabinet Minister, Ministry of New and Renewable Energy (MNRE)
- Dr Angela Lusigi, Resident Representative, UNDP India
- Shri. Ashish Khanna, Director General, International Solar Alliance (ISA)
- Dr Ashvini Kumar, Technical Advisor, Shakti Sustainable Energy Foundation (SSEF)
- Dr Arunabha Ghosh, CEO, Council on Energy, Environment and Water (CEEW)
- Smt. Ketaki Kokil, Vice President, Clean Energy Access Network (CLEAN)

On Day 2, the exhibition continued to garner significant policy attention and was visited by senior government officials, including:

- Dr Jeevan Kumar Jeethani, Senior Director, MNRE
- Mayank Tiwari, Additional Secretary, MNRE

Key Exhibition Themes & Solutions

The exhibitors were categorised into several high-impact verticals, demonstrating the maturity and breadth of the Indian DRE ecosystem:

A. Agro-Processing & Food Security

A dominant theme of the 2026 exhibition was the "Farm-to-Fork" DRE value chain. Innovations focused on reducing post-harvest losses and increasing farmer income through on-site processing.

- Agro-Processing: Organizations like Transfarm Technologies and Dharambir Food Processing showcased solar-powered machinery for food processing.
- Solar Drying: S4S Technologies, Raheja Solar, and PL - Rudra Solar displayed advanced drying solutions to increase the shelf life of produce.
- Irrigation: Khethworks and Kirloskar Brothers Limited presented micro-solar pumps and hydro turbines tailored for smallholder farmers.

B. Cold Chain & Storage

Sustainable cooling remains a critical challenge for rural logistics. Several exhibitors presented decentralised cooling solutions that eliminate dependency on the unreliable central grid.

- Leading Innovators: Inficold, Pluss Advanced Technologies, PL - ColdEasy, and PL - SaptKrishi exhibited various scales of cold storage, from farm-gate solutions to advanced phase-change material (PCM) storage.

C. Energy Storage & Infrastructure

With the increasing integration of DRE, the demand for robust energy storage solutions has scaled significantly.

- Battery Storage: Solar MD Duro, Arkle Energy, and Nunam Technologies presented the latest in battery management and energy storage systems.
- Ecosystem Support: The India Energy Storage Alliance (IESA) represented the broader storage ecosystem, highlighting national trends and integration strategies.

D. Electronics & Design

Crucial to the reliability of DRE hardware, specific organisations showcased the "brains" behind the power systems.

- Custom Development: Axonet Emsys and Emsys Electronics showcased custom electronic product development and specialised manufacturing essential for high-performance DRE hardware and control systems.

E. Livelihoods & Textiles

DRE applications for rural industrialisation were a core feature, moving energy beyond just "lighting" to "income generation."

- Textiles: Resham Sutra highlighted solar-powered machines for silk and textile production.
- Productive Applications: Svabag Labs and Customised Energy Solutions (CES CARES) demonstrated integrated DRE livelihood packages.

F. Clean Cooking & Emerging Tech

Addressing the domestic energy needs of the last mile, exhibitors showcased health-conscious and sustainable alternatives to traditional fuels.

- Cooking Solutions: Sustainergy Tech, Ecosense Appliances, and Exacta H2 presented biomass and hydrogen-based clean cooking technologies.

4. Special Features

- FPO Pavilion: A dedicated space for Farmer-Producer Organisations (FPOs), supported by the Environment Conservation Society, facilitated direct interaction between technology providers and rural community leaders.
- TAP-RISE: The Technology Acceleration Platform (a SEED Division Initiative) provided a spotlight for high-potential startups to connect with investors and mentors.
- Powering Livelihoods Pavalion: An initiative by Council on Energy, Environment and Water and Villgro, the pavilion featured enterprises including Rudra Solar (solar dryer), ColdEasy (cold storage), Niyo Farm Tech (solar sprayer), and SaptKrishi (cold storage), showcasing clean energy solutions that support rural livelihoods.

List of Exhibitors

Organisation	Products & Services	Organisation	Products & Services
Customized Energy Solutions (CES CARES)	DRE Livelihood Solutions	Pluss Advanced Technologies	Cold Storage
Transfarm Technologies	Agro Food Processing Machines	TAP-RISE	Technology Acceleration Platform
D.Light Energy	Solar LED Portables & Lighting Solutions	Rudra Solar (Powering Livelihoods)	Solar Dryer
Resham Sutra	Textiles & DRE Rural Livelihoods	ColdEasy (Powering Livelihoods)	Cold Storage
Inficold	Cold storage	Niyo Farm Tech (Powering Livelihoods)	Solar Sprayer
A&D Solar Enterprise	Solar EPC & DRE Livelihood Solutions	SaptKrishi (Powering Livelihoods)	Cold Storage
Dharambir Food Processing Technologies	Agro Food Processing Machines	Solar MD Duro	Battery Storage
S4S Technologies	Solar Dryers	Exacta H2	Clean Cooking & Hydrogen Solutions
Axonet Emsys	Custom Electronic Product Development	Eartheners	Solar EPC & DRE Livelihood Solutions
Emsys Electronics	Electronics Manufacturer	Envo Renewable Energy Services	Solar EPC & DRE Livelihood Solutions
Aboriginal Energy	Solar EPC & DRE Livelihood Solutions	IESA	Energy Storage (Ecosystem)
Raheja Solar Food Processing	Solar Dryers	SNL Energy Solutions	Solar EPC & DRE Livelihood Solutions
Kirloskar Brothers Limited	Pumps and Hydro Turbines	Svabag Labs	Off-grid DRE Cooperative for Productive Applications
Sustainergy Tech and Renewables	Biomass Cooking Stoves	Ecosense Appliances Pvt. Ltd.	Clean Cooking
Environment Conservation Society	FPO Pavilion	Arkle Energy Solutions	Battery Storage
Nunam Technologies	Battery Storage	Khethworks	Micro Solar Pump & Farm Equipments

The IDRES 2026 exhibition successfully demonstrated that Decentralised Renewable Energy is no longer an "alternative" power source but a central pillar of India's rural economy. By moving from simple lighting solutions to complex, multi-sectoral productive applications, the exhibitors at IDRES 2026 have set a clear roadmap for achieving an inclusive, sustainable energy transition in India and across the Global South.

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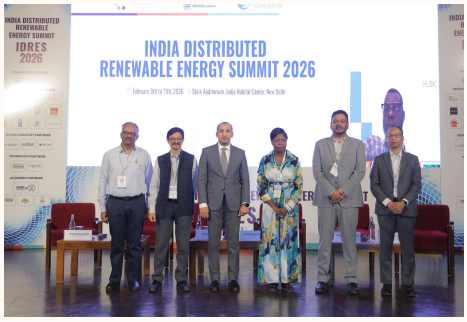
Event Highlights

Thematic Workshops at MNRE, New Delhi



Plenary Session at Stein Auditorium, IHC, New Delhi



Exhibition at Charminar, IHC, New Delhi




CLEAN DRE Awards at Stein Auditorium, IHC, New Delhi



Investors Match-Making at Maple Hall, IHC, New Delhi



Networking at IDRES



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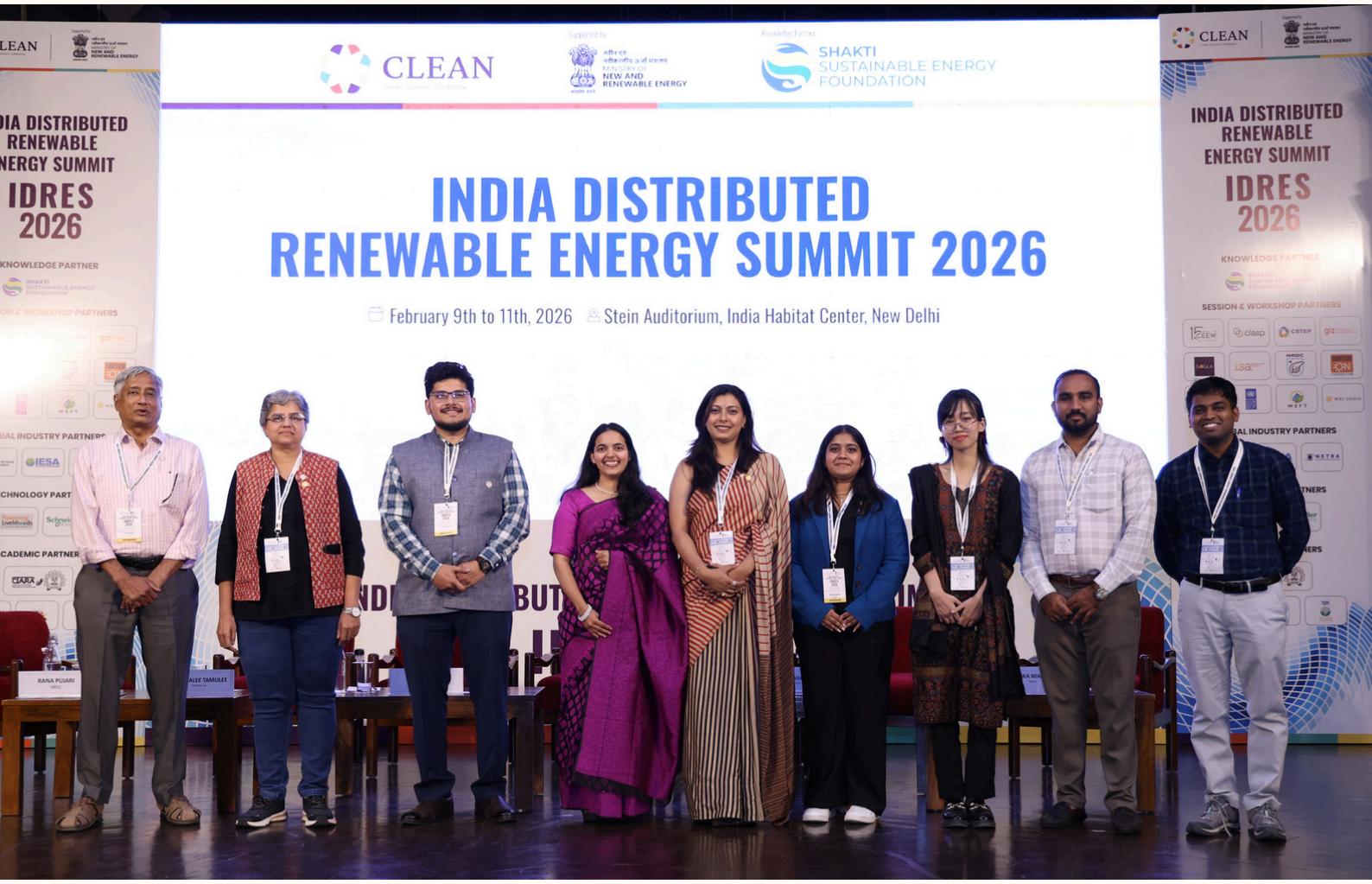

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