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# India SMART UTILITY Week 2025

**Session : Capacity Building in Utilities and Industry for Energy Transition**

**Assessing Skill Gaps and Formulating Skill Development Programs for Workforce Development in Future Energy Systems**

***Presented By***

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- Good Afternoon
- Greetings to all from GD Goenka Group.



- That's a crucial topic, especially with the transition towards sustainable and digitalized energy systems.  
**"Assessing Skill Gaps and Formulating Skill Development Programs for Workforce Development in Future Energy Systems":**

## 1. Assessing Skill Gaps

### A. Industry Trends Driving the Shift

- **Decarbonization:** Shift to renewable energy (solar, wind, hydrogen, etc.).
- **Digitalization:** Integration of AI, IoT, big data, blockchain, and smart grids.
- **Decentralization:** Growth of distributed energy resources (DERs), microgrids.
- **Electrification:** Electrification of transport and industries.
- **Energy Storage:** Increased role of batteries and alternative storage technologies

## B. Emerging Roles & Competency Requirements

Emerging Roles	Required Skills	Identified Gaps
Renewable Energy Engineer	Solar, wind, hydroelectric design, hybrid systems	Lack of practical exposure to advanced renewable tech
Energy Data Analyst	Data analytics, machine learning, predictive maintenance	Insufficient data science expertise within traditional energy workforce
Smart Grid Specialist	IoT, SCADA systems, cybersecurity	Cybersecurity and IoT integration gap
Battery Storage Technician	Battery management systems, safety standards	Limited battery tech expertise
Hydrogen Energy Expert	Hydrogen production, storage, transport	Lack of specialized hydrogen economy skills
Sustainability Consultant	Life cycle assessment (LCA), carbon footprinting	Need for cross-functional understanding of sustainability



## C. Soft Skills Gaps

- Project management in agile environments.
- Multidisciplinary collaboration.
- Change management & leadership for energy transition.
- Communication skills for stakeholder engagement



## A. Program Structure

1. Technical Upskilling Module
2. Soft Skills & Leadership Training
3. Certification & Partnerships

## B. Delivery Methods

- **Blended Learning:** Online modules + in-person workshops.
- **Simulations & Labs:** Virtual labs for grid systems, renewable setups.
- **On-the-Job Training:** Apprenticeships with renewable projects.
- **Hackathons & Bootcamps:** Focus on innovation for future energy systems



## C. Customization for Stakeholders

- **Entry-level workforce:** Foundational programs (energy basics, renewables intro).
- **Mid-career professionals:** Specialized upskilling (AI for energy, smart grid).
- **Leadership:** Strategic foresight, sustainability leadership, policy awareness.



### 3. Continuous Assessment & Feedback Loop

- Regular labor market intelligence (LMI) reviews.
- Industry advisory boards to align curriculum with evolving needs.
- Post-training assessments to measure impact and ROI.
- Alumni network to facilitate knowledge-sharing and mentorship.



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# THANK YOU

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[Links/References \(If any\)](#)