

National Skill Gap Study for High Growth

Questionnaire 8: Questionnaire for Generation of Green Electricity

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The Ministry of Skill Development and Entrepreneurship (MSDE), Government of India, is undertaking the 'National Skill Gap Study for High Growth Sectors' and NCAER is the implementing agency for the said study. The overall objective of this work is to develop a Labour Market Information System. The specific objective of this questionnaire is to understand the present and future demand for jobs roles/occupations and associated skills. This study is sponsored by the Ministry of Skill Development and Entrepreneurship.

Your identity would be held confidential while discussing your suggestions and views on the subject.

Respondent's Name:

Respondent's Company Name and Address:

Respondent's Designation:

Respondent's Phone:

Respondent's Email:

FIRM PROFILE

1. *What is the firm's ownership type? (Please select one)*

<input type="checkbox"/> Public Sector	<input type="checkbox"/> Public Limited	<input type="checkbox"/> Private Limited
<input type="checkbox"/> Partnership/Individual Ownership	<input type="checkbox"/> Multinational Company	<input type="checkbox"/> Limited Liability Partnership
<input type="checkbox"/> Cooperative	<input type="checkbox"/> Others, please specify: _____	

2. *What was the annual turnover range in FY 2023-24? (Please select one)*

<input type="checkbox"/> ≤ Rs 5 crore (Micro)	<input type="checkbox"/> > Rs 5 crore & ≤ Rs 50 crore (Small)
<input type="checkbox"/> > Rs 50 crore & ≤ Rs 250 crore (Medium)	<input type="checkbox"/> > Rs 250 crore (Large)

3. *Which green electricity generation sector is the firm involved in? (multiple selections possible)*

Green Electricity	Type of Production and Use: 1. Open Access 2. For selling to DISCOMs 3. Captive generation 4. Other, please specify	Scale of Generation: 1. Utility scale 2. Commercial and industrial 3. Residential 4. Other, please specify	Phase of Project Firm is involved with: 1. Design 2. Construction 3. O&M 4. Other, please specify*
Solar			
Wind			
Small Hydro			
Green Hydrogen			
Hybrid; please specify:			
Other; please specify			

*If the firm is involved in manufacturing specific components / systems of a green electricity generation plant, please mention the same under 'other', along with the type of components / systems manufactured.

8. What kind of association(s) does the firm have with the skilling institution(s) identified in Q.7? *(multiple selections possible)*
- | | |
|--|---|
| <input type="checkbox"/> We offer apprenticeships/ internships for trainee students | <input type="checkbox"/> We send our staff to take visiting classes or other classes |
| <input type="checkbox"/> We offer inputs to the course curriculum | <input type="checkbox"/> We sponsor lab facilities in TVET or other institutions |
| <input type="checkbox"/> We sponsor fresh skilling programmes to absorb the students later | <input type="checkbox"/> We sponsor re-skilling/upskilling programs for our employees |
| <input type="checkbox"/> No associations | <input type="checkbox"/> Other; please specify: _____ |

We have collated a list of occupations from the National Classification of Occupations (NCOs) and job roles from Skill Council for Green Jobs (SCGJ) associated with green electricity generation industry (solar, wind, small-hydro, green hydrogen, biogas) in Annexures 8.1 and 8.2

9. For all forms of green electricity generation that the firm is involved in (Q.3), do the job roles (Annexure 8.1 and 8.2) cover the activities involving EPC (design and pre-construction, construction and commissioning), O&M, business development¹?

Yes / No: _____

What other occupations/job roles should be included, for any of the green electricity generation projects the firm is involved in? Please specify: _____

10. As regards gender ratio, which job roles:
 Employ majority women (>50% of all workers in the job role): _____
 Employ some women (20% to 50% of all workers in the job role): _____
 Employ no women (0% of all workers in the job role): _____

11. How easy or difficult was it to fill the job roles (including the number of positions) advertised by the firm in the last three years (FY 2021-22 onwards)? (Add rows if necessary. If the firm advertised many job roles, you can specify job roles at two extremes: those which were easiest to fill, and those very difficult / un-filled)

S.No.	Green Electricity Sector (solar / wind / small hydro / hybrid / etc)	Job Roles advertised	Please Specify the Level: Entry level / intermediate or mid-level / senior level / managerial level / director level / executive level	Difficulty of filling jobs (rank) 1. Very easy; 2. Easy; 3. Average; 4. Difficult; 5. Very difficult; 6. Not filled at all

12. In Q.11, for the job roles with rank 3-6 on 'difficulty of filling jobs', can you please detail the skills, knowledge and education sought by the firm– in the form of a detailed job description? (Please refer to Table Q8.1. Request you to provide the details, for each of the relevant job roles, within the format of Table Q8.1). We are seeking the following information:

Green Electricity Sector (solar / wind / small hydro / hybrid / etc)	Job Role	Stage of Value Chain	Tasks	Educational Qualifications sought by the firm	Knowledge (technical and theoretical knowledge relating to the job role)	Technical Skills (Computer applications and software)	Years of Experience	Skills (refer to Table Q8.2)	Geographical areas/spatial clusters (existing or emerging) where it is most difficult to fill the role (mention States and Districts)

¹ Design and pre-construction: design of the project once a bid has been won. Direct employment created includes jobs for designers, planners, architects, engineers (non-installers), resource analysts and legal personnel. Construction and commissioning: actual installation of the project and setting up a connection to the national power grid. Direct jobs are created for construction workers, electricians, technicians, engineers, meteorologists, and technicians working for equipment vendors (such as inverter suppliers). Both skilled and unskilled workers are required during this phase of execution. Operations and maintenance create direct jobs for technicians, electricians, maintenance and security staff, and operations managers. Both skilled and unskilled workers are required to carry out O&M in the plant. Business development includes all actions taken to develop a specific project prior to submission of a possible bid (if the project is selected through a government policy scheme), as well as ongoing efforts to promote business. Direct employment generated includes jobs in sales, marketing, legal, financial, and government/regulatory affairs (CEEW & NRDC 2016).

13. Who is presently providing education and skilling for these 'hard to fill' job roles in Q.12, if any? Nobody / formal education system / vocational education system? Please specify: _____
Is the formal/vocational education system run by the government / private parties / NGOs?
Please specify: _____
Please list the formal and vocational training centres for these job-roles? _____
14. For the green electricity generation sectors the firm is involved (Q.3), what are the upcoming technological developments?
Please specify: _____
15. Is the firm planning to expand to other forms green electricity sectors / project phases / project types / locations – Over and above those identified in (Q.3, and Q 3.1 / 3.2 / 3.3 / 3.4)?
Yes / No: _____
If 'Yes', please detail which sector(s)/phase(s)/project type(s), and where (states and districts):

16. In view of the developments (Q.14 and Q.15), which job roles will be in-demand in the next three years by the firm? (Please refer to Table Q8.1. Request you to provide the details, for each of the relevant job roles, within the format of Table Q8.1).
We are seeking the following information:

Green Electricity Sector (solar / wind / small hydro / hybrid / etc)	Job Role	Stage of Value Chain	Tasks	Education	Knowledge	Technical Skills	Years of Experience	Skills (refer to Table Q8.2)	Geographical areas/spatial clusters where needs are highest (mention States and Districts)	Difficulty of finding workers 1. Not at all difficult 2. Somewhat difficult 3. Difficult 4. Very Difficult 5. Extremely difficult
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GENDER DIVERSITY AND CARRER PATH AT WORKPLACE

17. In the next three years, do you perceive a demand for women in particular job roles, either among the existing job-roles or those which will be in-demand in future?
Yes / No: _____
If 'Yes', please specify which ones: _____
18. Does the firm have hiring policies to encourage female employment, especially in non-traditional job roles?
Yes / No: _____
If 'Yes', please explain the policy in detail: _____
Does the firm provide creche on plant/office premises: Yes / No: _____
19. Has the firm defined sexual harassment policies, prevention systems, procedures and service rules for employees (prevention of Sexual Harassment at Workplace or POSH)?
Yes / No: _____
20. Does the firm offer a career-path to all its employees? (for instance, has anyone at the firm risen from being at a 'technician level position' to a 'managerial level position')?
Yes / No: _____
Does the firm fund the employee's education / upskilling / re-skilling, as may be required for higher level job roles? Yes / No: _____

EMPLOYMENT BACKGROUND

21. How many people are employed at the firm?

S.No.	Particulars	Number of people employed	
		Managerial Staff (No.)	Workers (No.)

22. With reference to the total employees identified in Q.21, what is the educational background of the employees (as percentage (%) of total employees)?

Below Class X (%)	Above Class X and Below Class XII (%)	Class XII pass (%)	Vocationally Educated (ITI, PMKVY, RPL etc.) (%)	Bachelor's degree and above (%)
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Table Q8.1: Details of Identified Job Roles
in Q.12 and Q.16 of the Questionnaire

(Request you to provide the details, for each of the relevant job roles, in the format as given below)

S. No.: _____

Job Role: _____

Table 1: Job Descriptors

Descriptors	Firm's Answer
Alternative job titles in the industry	
Green Electricity Sector (solar / wind / small hydro / green hydrogen / hybrid / etc)	
Stage of electricity generation value chain: 1. Design & pre-construction 2. Construction and commissioning 3. Operation and maintenance (O&M) 4. Business development 5. Other, please specify	
Is this job role: 1. 'Difficult to fill' at present (Q.12), or 2. Will be in-demand in next 3 years by the firm (Q.16)	
How many do you need to hire at the 'present moment'/now, or you will need to hire 3 years from now?	
Tasks to be performed in the job role (please include specific systems / components / technologies / personnel required to be dealt or interacted with, if any)	
Education: School (up to what level?) / ITI/ Short-term vocational training programme/ Bachelors/ Masters)	
Knowledge	General? What knowledge?
	Specialised (Sector, Occupational, and Trade)
Technical Skills: Software languages required, or maybe required in the near future	
Years of Experience, if any	
Skills required and level of competence (refer to framework of skills in Table Q8.2 below)	
Difficulty of finding workers in the job role, with the above requirements and the skills as detailed below: 1. Not at all difficult 2. Somewhat difficult 3. Difficult 4. Very Difficult 5. Extremely difficult	
Geographical areas/spatial clusters (existing or emerging) where it is most difficult to fill the role** (mention States and Districts)	
Salary Offered	

** Please explain the reasons behind skill shortage in the specified states and districts: Are there *demand side factors* (such as low salary, demanding work conditions, absence of platforms to advertise jobs, non-acceptability of workers from conventional labour markets, competition from other sectors to hire the same candidate, etc) and/or *supply side factors* (such as course not offered by Indian institutions, specialised skilled people not available, absence of and/or proximity to training centres, poor quality of skilling and training programs, lack of programs for re-skilling/upskilling workers from traditional sectors, high salary expectations, non-aspirational job role, availability of other work avenues, etc)?

Table Q8.2: List of Skills

<i>Please think whether the person in the above job profile would need the following skills to do their job. (Please choose the relevant skills and indicate the level of competence required for those skills)</i>		
Skills Required	If required, what is the degree of competence needed in the employee? 1. Beginner 2. Intermediate 3. Competent 4. Advanced 5. Very Advanced	Comments
<i>Reading Literacy:</i> Would they need to read and understand written sentences and paragraphs in work related documents?		
<i>Writing:</i> Would they need to communicate effectively in writing as per their audience for their job?		
<i>Speaking:</i> Do they need to talk to others to convey information effectively?		
<i>Communication:</i> Would they need to provide information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person?		
<i>Language Skills 1:</i> Is knowledge of the structure and content of the language including the meaning and spelling of words, rules of composition, and grammar required for the job?		
<i>Language Skills 2:</i> Any specific language requirement for the job? If Yes, which one?		
<i>Numeracy/Mathematics:</i> Would they need to work with numbers for their job?		
<i>ICT Literacy to Skills:</i> Would they need to use mobile phones/tabs/computers etc. to do their job? For example, Arts & Graphics, Desktop Publishing, Presentation, Spreadsheet, Word Processing, Programming, Client Server/Networking/Hardware, Operating Systems, Database/Statistics, Engineering Software and Web Page Design etc.		
<i>Self-learning to Active (Independent) Learning:</i> Would they need to understand new information for both current and future problem-solving and decision-making at their job? Are they expected to do on their own for the job or self-learn, if the material is provided to them?		
<i>Active Listening-</i> Do they need to listen for their job, like taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times?		
<i>Science-</i> Do they need to use scientific rules and methods to solve problems at work?		
<i>Problem Solving-</i> Do they need to identify problems and review related information to develop and evaluate options and implement solutions?		
<i>Learning Strategies-</i> Do they need to select and use training/instructional methods and procedures appropriate for the situation when learning or teaching new things?		
<i>Critical Thinking-</i> Would the worker need to use logic		

<i>Please think whether the person in the above job profile would need the following skills to do their job. (Please choose the relevant skills and indicate the level of competence required for those skills)</i>		
Skills Required	If required, what is the degree of competence needed in the employee? 1. Beginner 2. Intermediate 3. Competent 4. Advanced 5. Very Advanced	Comments
and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems?		
<i>Creativity</i> -Do the workers need to develop, design, or create new applications, ideas, relationships, systems, or products, including artistic contributions?		
<i>Independent research</i> -Would the worker need to conduct literature review, undertake data collection, cleaning etc., develop research plan?		
<i>Judgement and Decision-making</i> - Would the worker need to consider the relative costs and benefits of potential actions to choose the most appropriate one?		
<i>Systems Analysis</i> - Would the worker need to determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes?		
<i>Systems Evaluation</i> - Would workers need to identify measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system?		
<i>Financial Resources</i> - Would the worker need to determine how money will be spent to get the work done, and accounting for these expenditures?		
<i>Material Resources</i> -Would the worker need to obtain and see to the appropriate use of equipment, facilities, and materials needed to do certain work?		
<i>Personnel Resources</i> - Would the worker need to motivate, develop, and direct people as they work, identifying the best people for the job?		
<i>Time Management</i> - Managing one's own time and the time of others		
<i>Seek and Value Diversity</i> -Do workers need to work with people (as colleagues/clients etc.) from other cultures/States/socio-economic backgrounds etc? Is it important for their job performance? Is it likely to be important for their job performance?		
<i>Gender Diversity</i> -Do workers need to work with female colleagues/clients etc.? Is it important for their job performance? Is it likely to be important for their job performance?		
<i>Conscientiousness (including attitude towards work)</i> - Will the worker need to be organised, responsible, and hardworking or have any one of the following traits- Competence (efficient), organised, dutiful (not careless), ambitious, self-discipline (not lazy), and not impulsive?		
<i>Openness to Experiences</i> - Will the worker need to be open to new aesthetic, cultural, or intellectual		

Please think whether the person in the above job profile would need the following skills to do their job.
(Please choose the relevant skills and indicate the level of competence required for those skills)

Skills Required	If required, what is the degree of competence needed in the employee? 1. Beginner 2. Intermediate 3. Competent 4. Advanced 5. Very Advanced	Comments
experiences or have any one of the following traits- Imaginative, artistic, excitable, wide interests, curious and unconventional?		
<i>Extraversion</i> - Will the worker need to show the following traits- warmth (friendly), sociable, self-confident, energetic, excitement seeking (adventurous), and enthusiastic?		
<i>Agreeableness</i> - Will the worker need to work in a team in a cooperative, unselfish manner?		
<i>Neuroticism/Emotional stability</i> – Will the worker need to show emotional stability i.e. predictability and consistency in emotional reactions, with absence of rapid mood changes?		
Does the worker need social skills at work?		
<i>Instructing</i> - Does the worker need to teach others how to do something?		
<i>Negotiation</i> - Does the worker need to bring others together and try to reconcile differences?		
<i>Persuasion</i> - Do workers need to persuade others to change their minds or behaviour?		
<i>Occupation-specific skills</i>		
<i>Physical skills</i> , including job-specific complex psychomotor skills		
<i>Global Competence</i> – Globally competent workers		
<i>Any other?</i> Please specify:		