



STIMULATING INNOVATIVE-INCLUSIVE TEACHING AND VALIDATED LIFE-LONG LEARNING ON GREEN ENTREPRENEURSHIP VIA VR SIMULATIONS FOR DEAF AND HARD OF HEARING PEOPLE (DHH)

WP2. A3 Inclusive Green Industry Handbook



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the European Union**

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Introduction to the GREENENTRE4DEAF Inclusive Green Industry Handbook

Purpose of the Handbook

Welcome to the GreenEntre4Deaf Handbook! This handbook is crafted as a practical, visual guide aimed to inspire and support Deaf and Hard of Hearing (DHH) individuals on their journey to explore meaningful careers in the expanding green and sustainable economy.

What You Will Find Inside

It presents 10 green professions that are expected to grow in the coming years. Each profession is introduced through easy-to-understand factsheets, highlighting:

- Key tasks
- Required green and entrepreneurial skills
- Real work environments
- Current challenges in the field

How the Professions Were Chosen

The selected professions are based on reliable EU-level sources such as:

- ESCO (European Skills, Competences, Qualifications and Occupations)
- GreenComp (European Green Competence Framework)
- EntreComp (Entrepreneurship Competence Framework)

The goal is to promote both employability and entrepreneurial mindsets by showing how Deaf and Hard of Hearing youth can participate fully and confidently in the green transition.

Introduction to the GREENENTRE4DEAF Inclusive Green Industry Handbook

Who Can Use This Handbook

Whether used in a classroom, workshop, or at home, this handbook serves as a motivational tool for:

- Educators
- Trainers
- Learners

Additional Information

This handbook is closely linked to the interactive learning experiences offered through the GreenEntre4Deaf Virtual Reality (VR) game. It helps learners understand the green jobs they will explore in the VR simulations and challenge-based modules, providing a solid starting point for developing their own eco-business ideas.





Renewable Energy Engineers



ESCO Code: 2149.9.7

Profession overview:

Renewable Energy Engineers design, develop, and improve technologies that generate energy from natural, clean sources like the sun, wind, water, and biomass. Their work helps reduce carbon emissions and supports the transition to a greener, more sustainable future.

Key tasks & responsibilities:

- Designing and testing renewable energy systems (e.g. solar, wind, or hydro)
- Installing and maintaining energy equipment
- Researching new ways to store or generate clean energy
- Improving energy efficiency in buildings or industrial systems
- Ensuring safety, performance, and compliance with green standards

Work Challenges:

- Keeping up with rapid technology changes
- High cost of some renewable systems
- Navigating permits, policies, and regulations
- Balancing innovation with safety and reliability

Green skills - GreenComp

- Problem-solving: Finding ways to make energy cleaner and more efficient
- Critical thinking: Assessing energy systems to improve performance
- Climate action: Helping communities and businesses reduce emissions
- Embracing complexity: Managing multiple systems (technical, eco etc.)

Entrepreneurial skills - EntreComp

- Vision: Imagining sustainable energy solutions for the future
- Taking the initiative: Launching energy audits or consulting services
- Working with others: Collaborating with architects, builders, and policy-makers
- Learning through experience: Testing and adjusting based on feedback

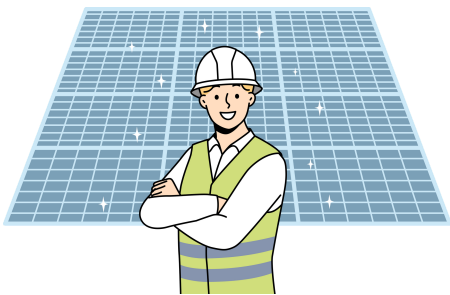
Work Environments:

Construction sites, rooftops, Research labs, renewable energy companies and more.



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Solar Energy Technicians



ESCO Code: 7411.1.4

Profession overview:

Solar Energy Technicians install, inspect, maintain, and repair solar photovoltaic systems on rooftops or on other structures. They ensure solar panels operate efficiently and safely, supporting the global shift toward clean, renewable energy.

Key tasks & responsibilities:

- Install solar panels
- Connect the systems to electrical grids or battery storage
- Perform routine maintenance and diagnostics
- Monitor energy output and troubleshoot faults
- Apply safety procedures and comply with regulations
- Communicate with clients and report on system performance

Work Challenges:

- Working at height or in remote outdoor locations
- Dealing with variable weather during installation
- Keeping up with evolving technologies and components
- Ensuring compliance with safety and green standards

Green skills - GreenComp

- Energy efficiency: Ensure optimal solar energy capture and system performance
- Sustainable use of resources: Choose and manage eco-friendly materials
- Climate action: Support carbon reduction through clean energy solutions

Entrepreneurial skills - EntreComp

- Taking initiative: Proactively identify system issues or client needs
- Working with others and mobilising resources (select the right equipment)
- Organise installation schedules and site logistics
- Learning through experience: Adapt to new tools, regulations...

Work Environments:

Residential and commercial rooftops, energy companies, solar farms, houses...



Onshore wind farm technician

ESCO Code: 3131.2



Profession overview:

An Onshore Wind Farm Technician is responsible for operating, inspecting, and maintaining wind turbines in onshore wind farms. This profession belongs to the renewable energy sector – wind power generation. Technicians ensure that wind turbines run safely and efficiently, assist engineers during installation, and carry out preventive and corrective maintenance.

Key tasks & responsibilities:

- Perform diagnostic inspections and troubleshoot failures in wind turbines.
- Carry out repair and maintenance of electrical, electronic, and sensor systems.
- Install, test, and calibrate both hardware and software related to turbine control.
- Monitor electric generators and keep detailed maintenance records.

Work Challenges:

- Physically demanding work.
- Rapid response to breakdowns, including on-call shifts and urgent interventions.
- Balancing efficiency with safety.
- Keeping up with evolving technology.

Green skills - GreenComp

- Valuing sustainability: ensures that wind turbines operate efficiently.
- Systems thinking: understands how mechanical, electrical, and control systems interact within the turbine and the wind farm.
- Individual initiative: takes proactive action to identify and resolve issues.

Entrepreneurial skills - EntreComp

- Identify opportunities: recognize maintenance, efficiency or needs in wind energy projects.
- Plan and manage resources: organize teams, materials and schedules.
- Take responsibility: make safe, sustainable technical decisions under pressure.

Work Environments:

Outdoor sites, at heights, indoor technical facilities, occasional office... settings:



Environmental Engineer

ESCO Code: 2143.1



Profession overview:

An Environmental Engineer applies engineering principles to protect, restore, and enhance the natural environment. This role belongs to the environmental protection and sustainable development sector and deals with managing air, water, and soil resources, reducing pollution, and ensuring compliance with environmental regulations.

Key tasks & responsibilities:

- Design and implement environmental protection systems.
- Conduct environmental impact assessments (EIAs)
- Monitor and analyze environmental data, including pollutant levels in air, water, and soil.
- Develop and oversee pollution control strategies.

Work Challenges:

- Regulatory and technical complexity.
- Balancing economic and environmental goals.
- Uncertain or contaminated sites.
- Cross-disciplinary coordination.

Green skills - GreenComp

- Valuing sustainability: ensures that solutions minimize environmental impact and promote long-term ecological balance.
- Systems thinking: analyze complex interactions between natural and human-made systems.
- Futures literacy: They anticipate long-term consequences of decisions.

Entrepreneurial skills - EntreComp

- Plan and manage resources: organizing projects, budgeting, and allocating resources.
- Take initiative: guiding clients toward sustainable, compliant decisions.
- Innovate: developing or applying new sustainable technologies.

Work Environments:

Outdoor sites, laboratories, office, industrial and municipal facilities, client locations.



Sustainability Manager

ESCO Code: 1213.8



Profession overview:

Sustainability Managers develop and implement strategies that reduce environmental impact and promote social responsibility. They focus on energy efficiency, waste reduction, circular economy, supply chains, compliance and stakeholder engagement to drive sustainable growth.

Key tasks & responsibilities:

- Develop and implement sustainability policies
- Monitor energy use, waste and resource efficiency
- Ensure compliance with environmental regulations
- Engage stakeholders and raise staff awareness
- Report on sustainability results and progress

Work Challenges:

- Balancing sustainability goals with cost and business priorities
- Ensuring compliance with changing environmental regulations
- Engaging staff and stakeholders to adopt sustainable practices

Green skills - GreenComp

- Systems thinking: understanding how environmental, social and economic factors are interconnected
- Critical thinking and problem solving: analysing impacts and finding sustainable solutions
- Collective action: engaging stakeholders to drive sustainability initiatives

Entrepreneurial skills - EntreComp

- Spotting opportunities: identifying sustainable business ideas and green innovations
- Mobilising resources: securing support, funding and networks for green initiatives
- Taking the initiative: leading projects and driving sustainable change

Work Environments:

Offices, production sites, construction areas, outdoor facilities, and stakeholder meetings.



Recycling Worker

ESCO Code: 9612.1



Profession overview:

Recycling Workers collect, sort, and process recyclable materials like paper, glass, metals, plastics, and electronics. Their work helps reduce waste, save resources, and protect the environment by turning used items into new products.

Key tasks & responsibilities:

- Collect recyclables from homes, businesses, or recycling points
- Sort materials by type, quality, or condition
- Operate machinery to compress, shred, or process materials
- Inspect materials for contamination or safety hazards

Green skills - GreenComp

- Resource use: Maximise recovery and reuse of materials
- Circular economy: Understand how items can be reprocessed
- Environmental care: Prevent pollution and landfill waste

Entrepreneurial skills - EntreComp

- Initiative: Suggest better collection or sorting methods
- Teamwork: Work well with colleagues and partners
- Organisation: Plan routes and daily tasks efficiently

Work Challenges:

- Handling heavy or bulky materials
- Exposure to unpleasant odours, noise, or weather conditions
- Identifying and safely removing hazardous materials from recyclables

Work Environments:

Recycling plants, trucks, sorting centres, and outdoor collection sites.





ICT Environmental Manager

ESCO Code: 1330.10



Profession overview:

An ICT Environmental Manager plans and manages the implementation of environmental strategies for ICT networks and systems. This role involves evaluating the carbon footprint of ICT infrastructure, developing organizational policies for sustainable IT operations, and devising strategic initiatives.

Key tasks & responsibilities:

- Assess and monitor the environmental impact of ICT systems
- Develop and implement green ICT policies and strategies
- Optimize energy use and resource efficiency in IT operations
- Report on sustainability performance and compliance
- Promote eco-friendly practices and awareness in ICT use

Work Challenges:

- Measuring and reducing the carbon footprint of ICT systems.
- Balancing performance, costs, and sustainability goals.
- Keeping up with fast-changing green ICT standards and regulations.

Green skills - GreenComp

- Measure and reduce ICT environmental impact
- Apply lifecycle thinking in ICT use and procurement
- Promote energy efficiency and responsible e-waste management
- Monitor and improve green performance indicators

Entrepreneurial skills - EntreComp

- Spotting Opportunities – identify green ICT solutions and market needs
- Vision – shape strategies for sustainable digital transformation
- Planning & Management – organize and implement green ICT projects

Work Environments:

Corporate offices, data centers, consultancy firms, and universities.





Vehicle technicians/ Electric Vehicle Technician

ESCO Code: 7231.10



Profession overview:

Vehicle Technicians repair and maintain both traditional and electric vehicles. They inspect engines, brakes, batteries, and electronic systems to ensure safe and efficient operation. They also contribute to reducing environmental impact by using eco-friendly tools, parts, and sustainable methods.

Key tasks & responsibilities:

- Check and diagnose problems in vehicles
- Repair or replace worn parts (brakes, batteries, etc.)
- Test and inspect electric vehicle systems
- Use safety tools and follow repair guidelines
- Keep work area clean and organized

Green skills - GreenComp

- Circularity – Reuse or recycle car parts where possible
- Responsibility – Use energy-saving tools and reduce waste

Entrepreneurial skills - EntreComp

- Working with Others – Collaborate with team and customers
- Planning and Management – Schedule repairs and manage tools responsibly

Work Challenges:

- Learning new electric car technologies
- Handling heavy tools and vehicle parts safely
- Diagnosing complex electric/electronic issues
- Following strict safety rules

Work Environments:

Car service centers, electric vehicle workshops, roadside or mobile repair units





Mixed crop growers /Urban Farmers

ISCO-08 Code 6114



Profession overview:

Urban Farmers (also known as Mixed Crop Growers in rural areas) grow a variety of crops such as vegetables, fruits, herbs, and grains, often using eco-friendly and sustainable farming practices. Urban farming happens in or around cities—on rooftops, in community gardens, or even vertical farms.

Key tasks & responsibilities:

- Planting, watering, and harvesting different types of crops
- Using organic methods to protect plants from pests and diseases
- Managing composting and soil health naturally
- Selling produce directly to local markets or restaurants
- Educating others about local food and sustainability

Work Challenges:

- Limited space and soil in urban areas
- Water availability and pollution
- Seasonal weather and climate variability
- Gaining visibility and building a customer base in cities

Green skills - GreenComp

- Living sustainably: Applying eco-friendly methods like composting and water-saving irrigation
- Systems thinking: Understanding how soil, weather, and plants work together
- Resource efficiency: Using renewable energy tools (e.g. solar irrigation)
- Critical thinking

Entrepreneurial skills - EntreComp

- Creativity: Designing a unique garden space or selecting rare crops
- Taking initiative: Starting a local produce delivery service or small CSA (Community Supported Agriculture)
- Planning & management: Organising planting schedules and budget planning

Work Environments:

Greenhouses or vertical farms, fields, Farmers' markets, and more.





Urban Planner

ESCO Code: 2164.4



Profession overview:

Urban planners create development plans for towns, urban areas, cities, and regions. They research the needs of the community or the region (economic, social, transport) and evaluate other parameters such as sustainability in order to present solid programs aimed at the improvement of the site.

Key tasks & responsibilities:

- Design urban development plans that balance residential, industrial, commercial, and recreational needs.
- Analyze land use patterns and propose zoning regulations.
- Forecast population growth and infrastructure needs to guide long-term urban expansion.
- Conduct socio-economic and environmental studies to inform planning decisions.

Work Challenges:

1. Balancing Competing Interests: Making decisions that satisfy multiple parties without compromising long-term sustainability or social equity.
2. Managing Rapid Urban Growth: How to accommodate growth without sacrificing green space or creating traffic bottlenecks

Green skills - GreenComp

- Systems Thinking - Understand how environmental, social, and economic aspects are connected
- Circular Design - Promote green infrastructure and energy-efficient urban spaces
- Climate Adaptation - Integrate resilience and mitigation strategies into city planning

Entrepreneurial skills - EntreComp

- Stakeholder Engagement - Collaborate with citizens, businesses, and local authorities
- Strategic Vision - Set long-term development strategies with sustainability goals
- Creativity - Develop innovative, inclusive, and future-proof urban solutions

Work Environments:

Office Environment, Fieldwork & Site Visits, Public & Community Spaces

