

RESkill 4 NetZero

Deliverable D4.1: 4 x training programmes to address urgent needs of the RE sector, deployed at scale and effectively via the NZIA platform

25/11/2025



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TABLE OF CONTENT

Executive Summary & Structure of the document	6
1. Introduction	7
2. Urgent Courses.....	8
2.1. Project Management for WP4 Course Criteria and Evaluation	8
2.2. Selected CDC Urgent Courses	14
2.2.1. Description of the institute.....	14
2.2.2. Courses Offered as Urgent Courses	15
2.2.3. CDC Urgent Courses : Relevance for the job market.....	15
2.2.4. CDC Urgent Courses: Relevance for the Skills Needs	17
2.2.5. Course dissemination photos.....	19
3.1.1 Course Dissemination Statistics	20
2.3. KIC InnoEnergy Urgent Courses.....	22
2.3.1. Description of the institute.....	22
2.3.2. InnoEnergy Urgent Courses	23
2.3.3. InnoEnergy Urgent Courses: Relevance for the Job Market	24
2.3.4. InnoEnergy Urgent Courses: Relevance for the Skills Needs	25
2.3.5. Course Delivery Description	27
2.3.6. Course Dissemination Statistic.....	29
2.4. OHKW Urgent Courses	30
2.4.1. Description of the institute.....	30
2.4.2. Courses Offered as Urgent Courses	30
2.4.3. OHKW Urgent Courses: Relevance for the Job Market	30
2.4.4. OHKW Urgent Courses: Relevance for Skills Needs.....	31
2.4.5. Course dissemination photos.....	33
2.4.6. Course Dissemination Statistics	35
2.4.7. Course Evaluation by the learners.....	35
2.5. WPE (RENEWACAD) Urgent Courses.....	40
2.5.1. Description of the institute.....	40
2.5.2. WPE (RENEWACAD) Courses Offered as Urgent Courses.....	40
2.5.3. WPE (RENEWACAD) Relevance for the job market	41

2.5.4.	WPE (RENEWACAD) Urgent Courses: Relevance for Skills Needs	42
2.5.5.	Course dissemination photos.....	43
2.5.6.	Course Dissemination Statistics	45
2.5.7.	Course Evaluation by the learners.....	46
2.6.	Publication on the RESkill4NetZero platform	49
2.7.	Marketing and communication activities.....	50
3.	Delivery results and Lessons learned.....	52
3.1.	Course Dissemination Statistics.....	52
3.2.	Challenges and Lessons Learned.....	52
	Annex 1: Job Roles relevance for the job market.....	55
	Annex 2: Skills Needs relevance for the job market.....	59
	Annex 3. Detailed course description of the courses offered by CDC	61
	Annex 4. Detailed course description of the courses offered by InnoEnergy	65
	Annex 5. Detailed course description of the courses offered by OHKW.....	71
	Annex 6. Detailed course description of the courses offered by WPE (RENEWACAD)	75

List of Figures

Figure 1: Initial Gantt Chart for the Kick Off of the Project	8
Figure 2: Dependencies on other Work Packages	9
Figure 3: CDC-KNX EIB Cours de Base, Luxemburg May 2025	19
Figure 4: CDC- KNX EIB Advanced Course Luxemburg May 2025	19
Figure 5: RESkill4NetZero platform.....	27
Figure 6: InnoEnergy Overview of the available courses.....	27
Figure 7: InnoEnergy Learners are guided to the InnoEnergy Open Skills Hub	28
Figure 8: OHKW Heat pump Course June 30, Berlin.....	33
Figure 9: OHKW Heat pump course started August 24, Berlin.....	33
Figure 10: OHKW Heat pump course started August 24, Berlin	34
Figure 11: OHKW Heat pump course started September 12, Berlin	34
Figure 12: OHKW Learner Feedback: did the camp help your career orientation or future path? (1=no, 5=yes)	36
Figure 13: OHKW Learners Feedback: how likely will you recommend the camp (1: not very likely up to 5: very likely)	36
Figure 14: OHKW Learners Feedback What do participants say about the OHKW Heat Pump Camps?	37
Figure 15: WPE (RENEWACAD) Basic electrical and mechanical training for wind, PV, heat pumps, energy storage.....	43
Figure 16: WPE (RENEWACAD) Manual Handling for wind, PV, heat pumps, energy storage	43
Figure 17: WPE (RENEWACAD) Working at heights for PV technicians heat pumps.....	44
Figure 18: WPE (RENEWACAD) Working at heights for wind technicians.....	44
Figure 19: WPE (RENEWACAD) Monsson Energy Nordics Commercial & Technical Aspects of Storage	

Solutions.....	44
Figure 20: WPE (RENEWACAD) Learners Feedback Document	47
Figure 21: OHKW Marketing in Media and on Social Media	50

List of Tables:

Table 1: Urgent Course Portfolio (18 Courses).....	13
Table 2: CDC Urgent Courses Relevance for the job market	17
Table 3: CDC Urgent Courses Relevance for the skills needs.....	18
Table 4: CDC Urgent Courses Number of students reached	20
Table 5: CDC Dissemination Schedule.....	21
Table 6: InnoEnergy Urgent Courses relevance for the Job Roles.....	25
Table 7: InnoEnergy Urgent Courses relevance for the skills needs	26
Table 8: InnoEnergy Urgent Courses Number of students reached.....	29
Table 9: OHKW Urgent Courses Relevance for the job market	31
Table 10: OHKW Urgent Courses Relevance for the Skills Needs	32
Table 11: OHKW Urgent Courses Number of Students Reached in 2025	35
Table 12: WPE (RENEWACAD) Urgent Courses Relevance for the job market.....	42
Table 13: WPE (RENEWACAD) Urgent Courses Relevance for the skills needs	43
Table 14: WPE (RENEWACAD) Urgent Courses Number of Students Reached in 2025.....	45
Table 15: WPE (RENEWACAD) Urgent Courses Schedule.....	46
Table 16: WPE (RENEWACAD) Summary of the learners feedback	48
Table 17: Urgent Courses Overall Number of Students Reached from November 2024 – November 2025	52
Table 18: Example of the job role - course table	58
Table 19: Example of the skills needs - course table	60

GLOSSARY

WP	WorkPackage
RE	Renewable Energy
RESP	Renewable Energy Skills Partnership
DCE	Communication, Dissemination and Exploitation
F2F	Face to Face
HVAC	Heating ventilation and air conditioning
UT's	Urgent Training Programmes

Executive Summary & Structure of the document

This deliverable describes the actions InnoEnergy has taken to create and deliver a reactive VET training programme, called Urgent Courses, aimed at addressing urgent skills needs within the Renewable Energy sector. This activity has taken place in the first year of the project.

WP4 is aimed at coordinating the delivery of the urgent trainings and pilot trainings for the Renewable Energy sector. The activity included the rapid deployment of a VET training programme to address urgent needs. It involves the swift development of an upskilling programme tailored to address the immediate needs of the renewable energy sector. The programme will be designed based on a rapid assessment of urgent skill gaps identified at the project formulation.

The objective of this Task “ T4.1 Design of a reactive and urgent upskilling programme in year 1” was for four partner institutions from the consortium - CDC, InnoEnergy, OHKW and WPE (RENEWCAD) - each actively involved in course delivery and skills development, to organise an urgent course dissemination in four European countries namely Germany, Romania, Spain, Luxembourg, with the goal of reaching 400 learners. We also embarked on finding some additional courses (the Back Up scenario) delivered by other Consortium Partners to have a broader offering in scope and language ensuring the 400 learners target. Two institutions InnoEnergy and Monsson Energy Nordics (MEAB) WPE (RENEWACAD) delivered 8 “Back Up Urgent Courses”. This resulted in 7 courses in the Urgent Course portfolio.

Thanks to the overwhelming enthusiasm of the four institutions, we overreached the targets of this work package:

- We created 18 urgent courses as part of the Urgent Programmes. The complete course portfolio can be found here: <https://reskill4net-zero.eu/renewable-energy-trainings/>
- The KPI was initially set at 400 learners, but we overachieved this goal and finally reached 578 learners (Status November, 20, 2025)

1. Introduction

The purpose of *T4.1 Design of a reactive and urgent upskilling programme in year 1* of Work Package 4 is to design a reactive and urgent upskilling programme in Year 1 and rapidly deploy a VET training programme to address urgent skill needs.

This task involved the development of an upskilling programme tailored to address the immediate needs of the renewable energy sector. The programme was designed based on a rapid assessment of urgent skill gaps identified as defined in *T2.2 Undertaking a Skills Needs Analysis* (see annex 2), which focused on delivering targeted training modules that can be quickly deployed to enhance the workforce's capacity to meet current challenges.

A total of 4 Urgent Training Programmes (UTs) in Romania, Germany, Luxembourg, Spain have been developed. To ensure rapid set up and deployment, the courses of CDC and EIT – already existing - were published on the project website. The two other institutions, OHKW and WPE (RENEWCAD), have developed new courses based on existing modules and materials. As the course duration was limited to 3 months, more condensed versions were created by extracting content from lengthier curricula. The courses of EIT are fully online. The courses of CDC, OHKW and WPE (RENEWCAD) are delivered in a class environment where the learners can develop practical knowledge.

The development and deployment of the UTs to deliver upskilling and reskilling needed was planned for year 1 of the project.

The courses are offered to workers seeking a new career in renewable energy and existing energy workers wanting to make a transition to renewable energy and focuses on occupational profiles identified as urgent. The definitions of the urgent job roles were described in the T2.2 (see annex 1) .

The language of the training depends on the country where the course takes place. The CDC trainings are offered in French and German. InnoEnergy trainings are available in English and Spanish. OHKW delivers the courses in German. WPE (RENEWACAD) delivers courses in Romanian and Monsson Energy Nordics (MEAB) partner of WPE who delivered fall back courses (as explained later) in Swedish

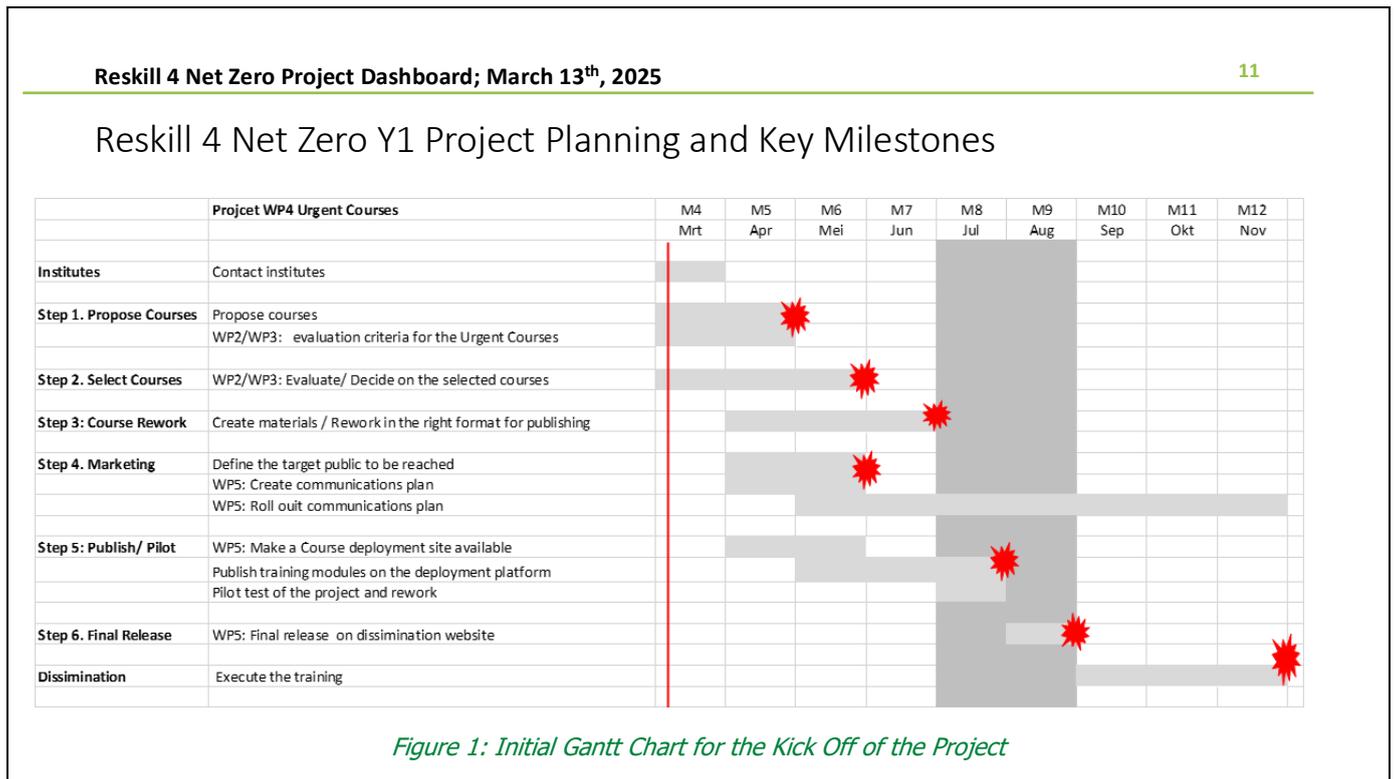
The main aim of this deliverable is to document the work done, in terms of design, development and execution, regarding the Urgent Courses work package.

The document comprises the following two main sections: 1. design and delivery of the Urgent Courses; 2. delivery results and lessons learned.

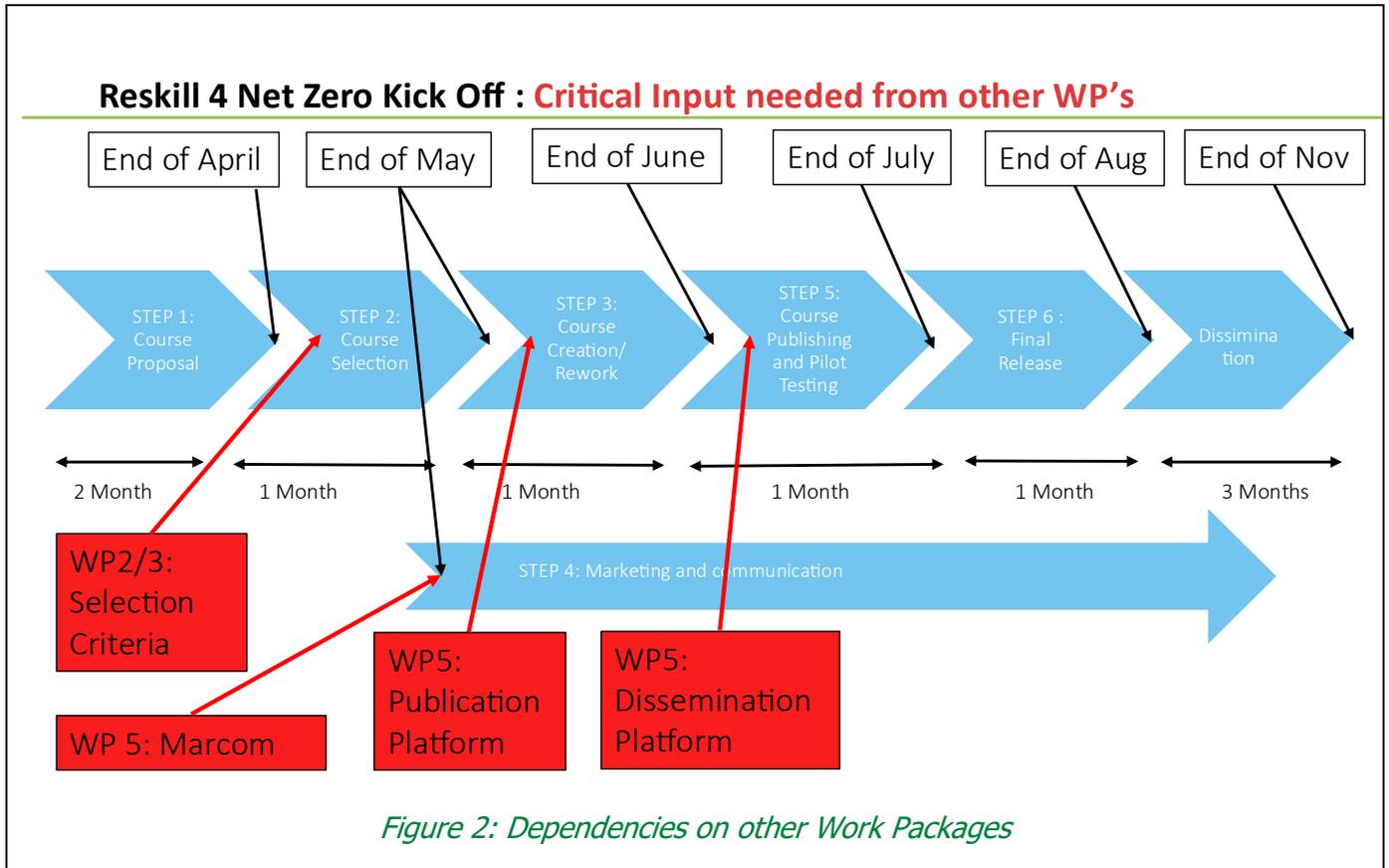
2. Urgent Courses

2.1. Project Management for WP4 Course Criteria and Evaluation

As the WP4 Urgent Course required a targeted effort to reach 400 learners in the first year of the project, InnoEnergy, the Project Coordinator, appointed a dedicated and experienced Project Manager to oversee the delivery of the Urgent Courses. To ensure timely progress and tangible results in a short timeframe, the Project Manager developed strict project plans with clearly defined actions (see Figure 1). Bi-weekly meetings were set up with the organisations delivering the Urgent Courses (part of the WP4 team)



This also included a risk analysis. One of the main Risks to be dealt with was the dependency on the results of other WPs, see Figure 2.



As a first step, in person and online meetings were set up between the organisations delivering the Urgent Courses to evaluate the possibilities and/or roadblocks to deliver the courses. All the organisations were very cooperative and able to deliver the required targets. A detailed plan was set up to create the framework in which the Urgent Courses could be delivered. These consultations also showed that the Urgent Courses, because of the limited time available, were, as agreed upon in the Grand Agreement, courses which already existed and could be reworked to be an Urgent Course. CDC and InnoEnergy decided to work with their existing courses. WPE (RENEWACAD) decided to extract the formats needed by Urgent Courses out of existing courses. The existing courses often span several months (sometimes even a year), but were reduced to fit within a duration of less than 3 months. Finally, OHKW decided to implement the courses for which they already had a course design.

During the Kick Off meeting, we also agreed:

- The number of students to be trained (400) would be spread evenly over the different countries, to be 100 per country. After some discussion the target KPI's per country were agreed upon.
- The Institutes could deliver several courses in parallel, e.g. CDC proposed 3 parallel courses. The number of students per course are calculated as follows: e.g. for CDC in Luxemburg as $3 \times 25 = 75$.

- For the 4 countries, with each institute delivering about 4 courses, we would come up with a portfolio of about 16 courses to handle the urgent job needs. More courses would make the dissemination in such a short period of time too complex.
- The aim of the RESkill4NetZero WP4 is to create 8 Pilot Trainings based on the Skills Needs Analysis conducted in WP2 and the Curriculum Development Framework designed in WP3. The deliverable from *WP3 – Core VET Curriculum & EU Qualifications / Certifications* describing the curriculum is only due in November 2026. Since task T4.1 *Design of a reactive and urgent upskilling programme in year 1* was scheduled to begin at the very start of the project in November 2024, the criteria for selecting the Urgent Courses could not be based on the outcomes of WP3. To ensure a timely launch, the WP4 Urgent Course Team decided to rely on the Skills and Roles defined in the Grant Agreement. These are outlined in the Technical Description (Part B), Section 1. *Relevant Background and General Objectives/ Occupational Profiles and Target Audiences*. These criteria are reflected in Annex 1 and Annex 2 of this document. By using these criteria, we were able to start our work immediately and maintain alignment with the project’s planned timeline.
- To mitigate dependence on the WP5 Publication and Dissemination Platform, two decisions were made. First, each organisation was allowed to continue using its own dissemination platform and marketing strategy, with the added requirement that the Urgent Courses display the “supported by the EU” logo. Second, from the beginning, we collaborated with WP5 Marketing and Communication to support the setup of the Project website. The WP5 Project Lead was also invited to take part in our bi-weekly meetings to maintain open communication channels.
- Tracking the number of learners: the institutes were allowed to use their own internal tracking platform, provided that the learner numbers and data were/are traceable and accessible by any EU auditors.

Another important point was the definition of the methodology to count a “learner”. We agreed the following:

Learners were counted for KPI purposes based on the criterion of “certification of course attendance”, which confirms that a participant completed the full course—either face-to-face (F2F) or online). While it was not mandatory to issue a “certificate of completion” (which indicates successful achievement of learning objectives), institutions were free to provide one if desired.

The second step was to define the process of selecting the Urgent Courses. Each participating institution had a broad portfolio of offerings. The following actions were taken:

- Action 1: defining the selection criteria to be used, described in annex 1 and 2.
- Action 2: define a list of selected courses. We agreed that several courses could be selected, to cover more skills and roles. We also decided to limit the number of courses to 16, to be able to keep a good overview of the number of learners. This was evaluated

in a document which each institute created for review, based on a template provided by the Project Management team.

- Action 3: the institutes described the course details which were then sent to the WP2 team for feedback.
- Action 4: after positive feedback, the courses could be disseminated via two channels: the own sales channel of the institution and, once the website was operational, via the RESkill4NetZero website.
- Action Step 5: as dissemination began on a bi-weekly/ monthly basis, the number of learners were tracked.

From the beginning, the WP4 team implemented a contingency plan to ensure we could meet the ambitious KPI of 400 learners. Recognising the potential challenges in reaching this target within the limited timeframe, we developed a “fallback scenario” to look for more organisations in the Consortium who could deliver additional Urgent Courses.

All learning institutes within the consortium were contacted to identify additional courses that could be categorised as Urgent Courses. Finally, two partners agreed to deliver the additional Urgent Courses:

- InnoEnergy Skills Institute offering several online courses. Out of these, four English courses were selected as Urgent Courses for the jobs and skills needs. These courses are:
 - Basic Concepts of Electrical Systems
 - End of Life, Second life & Recycling
 - Digital Battery Passport System: an introduction
 - Introduction to Battery Safety
- Monsson Energy Nordics (MEAB) WPE (RENEWACAD) offered in Sweden one Urgent Course for the jobs and skills needs:
 - Commercial & Technical Aspects of Storage Solutions

The advantage of adding the “fallback scenario” was to additionally include English online courses and Swedish spoken courses in our portfolio so a wider target group could be reached.

The first Urgent Courses were launched by CDC in March 2025 and by WPE (RENEWACAD) in May 2025. In the first three months, already 66 learners participated in the classes.

The following Urgent Course Portfolio was created:

CDC	KNX / EIB - Cours de base https://metiers.cdc-gtb.lu/training/fr/co/ELEC-3-32-001.html
	KNX / EIB - Cours avancé https://metiers.cdc-gtb.lu/training/fr/co/ELEC-4-32-002.html
	KNX / EIB - HVAC https://metiers.cdc-gtb.lu/training/fr/co/ELEC-4-32-003.html
InnoEnergy	Basic Concepts of Electrical Systems https://openskillshub.innoenergy.com/course/basic-concepts-of-electrical-systems
	Digital Battery Passport Systems: An Introduction https://openskillshub.innoenergy.com/course/digital-battery-passport-system-an-introduction
	Introduction to Battery Safety https://openskillshub.innoenergy.com/course/intro-to-battery-safety
	End of Life Second Life, and Recycling (English) https://openskillshub.innoenergy.com/course/end-of-life-second-life-and-recycling
InnoEnergy Spain	End of Life Second Life, and Recycling (Spanish) https://openskillshub.innoenergy.com/course/fin-de-vida-util-segunda-vida-y-reciclaje
OHKW	Design and Planning of Heat Pump Systems: https://ohkw.de/courses/planung-von-waermpumpensystemen/
	Hydraulic Balancing: Legal Requirements, Calculation Methods & Practical Implementation: https://ohkw.de/courses/berechnung-hydraulischer-abgleich
	Heat Pumps in Building Renovation https://ohkw.de/courses/heizungssanierung-mit-waermpumpen-in-ein-und-mehrfamilienhauser/

	<p>Technical Sales & Planning of Heat Pump Systems</p> <p>https://ohkw.de/courses/technischer-vertrieb/</p>
	<p>Heat Pump Summer Camp</p> <p>https://ohkw.de/courses/heat-pump-summer-camp/</p>
WPE (RENEWACAD)	<p>Working at heights for wind technicians</p> <p>https://renewacad.eu/en/reskill4netzero-courses-det/1/1/working-at-heights-for-wind-technicians/</p>
	<p>Working at heights for PV technicians/heat pumps</p> <p>https://renewacad.eu/en/reskill4netzero-courses-det/1/2/working-at-heights-for-pv-technicians-heat-pumps/</p>
	<p>Manual handling for: wind, PV, heat pumps, energy storage</p> <p>https://renewacad.eu/en/reskill4netzero-courses-det/1/3/manual-handling-for--wind--pv--heat-pumps--energy-storage/</p>
	<p>Basic electrical and mechanical training for wind, PV, heat pumps, energy storage</p> <p>https://renewacad.eu/en/reskill4netzero-courses-det/1/4/basic-electrical-and-mechanical-training-for-wind--pv--heat-pumps--energy-storage/</p>
Monsson Energy Nordics (MEAB)	<p>Commercial & Technical Aspects of Storage Solutions</p> <p>https://monssonenergynordics.com/energy-solutions/training-center/</p>

Table 1: Urgent Course Portfolio (18 Courses)

2.2. Selected CDC Urgent Courses

2.2.1. Description of the institute

The Centre of Competence in Energy Efficiency and Transition (CDC)¹ aims to meet the training needs in the field of energy transition of craft companies and other SMEs, architectural and engineering firms, municipalities and state administrations.

The Competence Centre for Energy Efficiency and Transition was officially created on 13 November 2023 by an agreement signed between the Technical Engineering Building Competence Centre and the Ministry of the Environment, Climate and Sustainable Development.

The Centre's objectives are threefold:

- Meeting the challenge of the energy transition.
- To offer efficient and tailor-made training and consulting measures.
- Take into account the needs of all the trades concerned.

International collaborations

The Centre of Competence in Energy Efficiency and Transition regularly establishes partnerships with other vocational training centres specialising in energy efficiency. Its objective is to ensure that training is always up-to-date.

All the training courses offered by the Centre of Competence in Energy Efficiency and Transition are given by recognised experts in their field. The training courses combine theory and practice in a framework that promotes learning. The Training Centre offers the following training components:

- State-of-the-art technical training courses with a focus on practice in the field of energy efficiency, sustainability and renewable energies.
- A pedagogical engineering which, with its systems of references, encompasses the professions, their activities and their skills as a whole.
- An innovative system for the recognition of skills in the vocational training sector. It is based on the level structure of the European Qualifications Framework.
- Public awareness of energy issues and the need to adopt more sustainable behaviours, through practical workshops, targeted communications, participation in fairs and the organisation of events.

KEY INVOLVEMENT OF CDC IN URGENT TRAINING PROGRAMMES: Centre de Competence in Energy Efficiency and Transition in Luxembourg is responding to the acute need for skilled HVAC

¹ CDC <https://www.cdc-gtb.lu/>

technicians and building insulation experts with an urgent training programme. Thus, intensive course ranges from 8 to 24 hours, ensuring a focused and personalized learning experience aimed at enhancing energy efficiency and sustainability in construction projects.

2.2.2. Courses Offered as Urgent Courses

Urgent Courses offered by the CDC Organisation consist of the 3 courses:

- KNX / EIB - Cours de base : <https://metiers.cdc-gtb.lu/training/fr/co/ELEC-3-32-001.html>
- KNX / EIB - Cours avancé : <https://metiers.cdc-gtb.lu/training/fr/co/ELEC-4-32-002.html>
- KNX / EIB – HVAC: <https://metiers.cdc-gtb.lu/training/fr/co/ELEC-4-32-003.html>

REMARK: The curriculum will encompass Initial VET (IVET) levels (EQF 3-5), higher VET (EQF 6-8), and continuing VET (CVET) for reskilling workers.

Detailed courses description can be found in Annex 3

2.2.3. CDC Urgent Courses : Relevance for the job market

To build the below table for evaluating the Urgent Courses against the Job Market needs, the Occupational Profiles defined in the Grant Agreement were used as a reference.

For example, for the top rows in the table, the following descriptions of the job roles were applied.

Government:

1. Planners – white collar professionals

This category of workers includes urban planners, energy managers and regulators, which need to be trained on all aspects of RES technology, installation best practices, resource monitoring and management, with a view of promoting sustainable integration of renewable energy resources in energy planning strategies and local development.

Engineering:

2. Renewable Energy Consultants - white collar professionals

The occupational profile for this role involves an engineer specialized in designing renewable energy plants, including solar, wind, geothermal, and hybrid projects. This professional is responsible for selecting plant locations, determining panel orientation, and designing geothermal heat pump systems with a consideration for geological

aspects. Knowledge of the permitting process across all renewable energy sources (RES) is crucial. With the growth in renewable projects, there's a need to both train and attract more engineers and high-level STEM professionals into renewable energy careers. Planning engineers also play a key role in ensuring the effective delivery of heat pump installations in multi-family and commercial buildings.

3. Energy Engineers – white collar professionals

Energy Engineers in the renewable sector are increasingly required to upskill in emerging areas such as circularity of renewable energy technologies, digitalization and new business ecosystems, transition management, systemic thinking, and leadership. These professionals must adapt to new technologies, explore innovative business models, and look beyond traditional financing streams. Upskilling in these areas is crucial for addressing the complexities of renewable energy projects and leading the sector towards sustainable and efficient energy solutions.

In the table, the first column shows all job roles the RESkill4NetZero project is targeting. For each Urgent Course, the target audience was defined and included in the other columns of the table. This resulted in the table shown below to evaluate the targeted job roles for each of the Urgent Courses.

The complete description of the job roles can be found in Annex 1.

KNX Building/ Home Automation Management Training Critical Roles / Occupational Profiles	ELEC- 3- 32- 001- Cours de Base	ELEC- 4- 32- 002- Cours Avancé	ELEC- 4- 32- 003- HVAC
Government:			
1.Planners – white collar professionals			
Engineering:			
2.Renewable Energy Consultants - white collar professionals			
3. Energy Engineers – white collar professionals	x	X	X
Manufacturing			
4. Factory Operatives / Maintenance – blue collar professionals			
5. Industrial Engineers - white collar professionals			
Electrical			
6. Electricians (Domestic) – grey collar professionals	x	x	x
7. Industrial Electricians – grey collar professionals	x	x	x
Technicians			
8. Renewable Energy Technicians (wind / solar / geothermal / heat pumps) – blue collar professionals	x	x	x

9. Gas technicians (biogas / hydrogen)			
10. HVAC and refrigeration technicians			
Operations:			
11. RE Power Plant operators – grey collar professionals	X	X	X
12. Health and Safety Professionals – grey collar professionals	X	X	X
Disposal & Recycling			
13. Critical Raw Material recovery			

Table 2: CDC Urgent Courses Relevance for the job market

2.2.4. CDC Urgent Courses: Relevance for the Skills Needs

For evaluating the Skill Needs against the Urgent Courses a similar method as described above was used.

The skills strategy and training programme addresses 5 core areas of skills structured along the Renewable Energy value chain: Design, Production, Installation, Operation & Maintenance and Disposal. An indicative list of skills (as defined in the Grant Agreement) was included in the table for evaluating the Urgent Courses.

For example, the area of Design the Skills Needed was linked to the following technical specialisations, as the below table shows: RE Engineering, RE Technologies, System Design (Digital), Modelling and Simulation, Project Management, Sustainable Design, Administration, legal skills for permitting.

For each Urgent Course, a similar table with the skills/ courses was created.

Further details on how this table is created can be found in Annex 2

KNX Building/ Home Automation Management Training Skills / Competences	ELEC- 3-32- 001- Cours de Base	ELEC- 4-32- 002- Cours Avancé	ELEC- 4-32- 003- HVAC
Design			
RE Engineering			
RE Technologies			
System Design (Digital)			
Modelling and Simulation			
Project Management			
Sustainable Design			
Administration, legal skills for permitting			
Production			
RE Manufacturing processes			
Materials used in RE Systems			
Mechanical skills			

Quality control			
Problem solving/ Diagnostics			
Digital skills (CAD/ AR)			
Programming industrial computers and sensors			
Installation			
Electrical Engineering	X	X	X
HVAC Engineering	X	X	X
System Design and Sizing			
System Installation	X	X	X
Commissioning and trouble shooting	X	X	X
RE Project Management			
RE installation best practices, resource monitoring and management		X	X
Operations and Maintenance			
RE Safety Protocols and permits			
Standards and regulations			
Diagnostic tools & system analysis	X	X	X
Energy management		X	X
Environmental impact			X
Electrical and HVAC	X	X	X
Refrigerant leak detection			
Disposal			
Circularity of RETs			
Life Cycle Assessments			
Electrical and HVAC	X	X	X
Safety and regulatory standards for disposal			
Circularity of renewable energy technologies			
New business ecosystems			
Transition Management			

Table 3: CDC Urgent Courses Relevance for the skills needs

2.2.5. Course dissemination photos



Figure 3: CDC-KNX EIB Cours de Base, Luxembourg May 2025



Figure 4: CDC- KNX EIB Advanced Course Luxembourg May 2025

3.1.1 Course Dissemination Statistics

CDC	Total Nov 20	Nov 2024	Dec	March 2025	Apr	May	June	July	Aug	Sept	Oct	Nov
Courses	74	16	5	16	8	15	0	0	0	14	0	0
KNX / EIB – Basic Course	46	8		16	8	7	x	x	x	7	x	x
KNX / EIB – Advanced Course,	20	8	5							7		
KNX / EIB – HVAC	8					8						
REMARK: X = no courses planned												

Table 4: CDC Urgent Courses Number of students reached

Table 4 gives an overview of the learners reached with the Urgent Courses by CDC per course.

CDC started to deliver the Urgent Courses already in November 2024. They were the first organisation to start the dissemination. Urgent Courses are only organised when a minimum number of learners is enrolled.

Example of the course dates & participants is given in Table 5.

Course Name	Internal Reference	Start date	End date	Status of the session	participants	hours
KNX HVAC	ELEC-4-32-003	06/11/2025	07/11/2025	Planned	2	16
KNX / EIB - Cours avancé	ELEC-4-32-002	27/10/2025	31/10/2025	Not Realized	3	40
KNX / EIB - Cours avancé	ELEC-4-32-002	13/10/2025	17/10/2025	Not realized	4	40
KNX / EIB - Cours de base	ELEC-3-32-001	29/09/2025	03/10/2025	Realized	8	40
KNX / EIB - Cours de base	ELEC-3-32-001	22/09/2025	26/09/2025	Realized	7	40
KNX / EIB - Cours avancé	ELEC-4-32-002	08/09/2025	12/09/2025	Realized	7	40
KNX HVAC	ELEC-4-32-003	27/05/2025	28/05/2025	Realized	8	16
KNX / EIB - Cours de base	ELEC-3-32-001	19/05/2025	23/05/2025	Realized	7	40
KNX / EIB - Cours de base	ELEC-3-32-001	14/04/2025	18/04/2025	Realized	8	40

KNX / EIB - Cours de base	ELEC-3-32-001	24/03/2025	28/03/2025	Realized	8	40
KNX / EIB - Cours de base	ELEC-3-32-001	03/03/2025	07/03/2025	Realized	8	40
KNX / EIB - Cours avancé	ELEC-4-32-002	09/12/2024	13/12/2024	Realized	5	40
KNX / EIB - Cours de base	ELEC-3-32-001	25/11/2024	29/11/2024	Realized	8	40
KNX / EIB - Cours avancé	ELEC-4-32-002	18/11/2024	22/11/2024	Realized	8	40

Table 5: CDC Dissemination Schedule

2.3. KIC InnoEnergy Urgent Courses

2.3.1. Description of the institute

The InnoEnergy Skills Institute (IESI)² addresses the growing demand for skilled workers in clean energy and electrification across Europe and beyond.

The Institute was launched as an initiative of EIT InnoEnergy, supported by the European Commission, and works in partnership with industry, training providers, and public institutions.

Its objectives are threefold:

- Support the green industrial transition through practical, job-ready training.
- Develop and deliver high-quality, role-based learning programmes and certifications.
- Respond to the workforce needs of emerging sectors such as batteries, hydrogen, solar, wind, and energy efficiency

International collaborations

The Skills Institute regularly establishes partnerships across Europe with training providers and commercial industry partners. Additionally, InnoEnergy has a wide network of partners in the business acceleration field, as well as with industry professional organisations, such as the European Battery Alliance (EBA) and the European Solar PV Industry Alliance (ESIA).

The Skills Institute offers product and services in the following areas:

- Skills Intelligence.
 - Detailed research & reports on what skills are needed in the renewable energy job market now and in the future.
 - Job Role Profiles that are skills-based and outline what knowledge, skills and abilities are required for a specific job(s)
 - Learner Journey Design and Training.
- Learner Journey Design and Training
 - Learner Journeys for Job Roles that outline what a person needs to do and know to attain or excel at the specific job role.
 - Curriculum map development with learning outcomes that outlines a training programme for a specific role, topic, or process; includes what should be taught & how.
 - Development of the programme which can be custom content development, off the shelf content, or a combination of both.

² IESI : <https://innoenergy.com/skillsinstitute/>

- Certification & Assessment.
 - Development & deliver of programme certifications aligned to curriculum map learning outcomes.
 - Development & delivery of training programme and/or Job Role assessments & rubrics.

KEY INVOLVEMENT IESI IN URGENT TRAINING PROGRAMMES: IESI aims to provide foundational knowledge at EQF levels 4-6 in the form of online, asynchronous training to build a pool of trainees who have the pre-requisite foundational knowledge to pursue further vocational training for a wide variety of roles.

2.3.2. InnoEnergy Urgent Courses

After a thorough review of our available courses, four General Energy modules met the greatest number of skills and jobs and were considered to provide a strong foundation for learners looking to further their careers in the renewable energy space.

The course delivered by InnoEnergy Spain as described in the project description is:

- End of Life Second Life, and Recycling (Spanish versions):
<https://openskillshub.innoenergy.com/course/fin-de-vida-util-segunda-vida-y-reciclaje>

The four additional Urgent Courses which are published as “Backup Courses” are :

- Basic Concepts of Electrical Systems:
<https://openskillshub.innoenergy.com/course/basic-concepts-of-electrical-systems>
- Digital Battery Passport Systems: An Introduction:
<https://openskillshub.innoenergy.com/course/digital-battery-passport-system-an-introduction>
- Introduction to Battery Safety: <https://openskillshub.innoenergy.com/course/intro-to-battery-safety>
- End of Life Second Life, and Recycling (English versions):
<https://openskillshub.innoenergy.com/course/end-of-life-second-life-and-recycling>

Each of these courses addresses skills identified in both preliminary research and the results from WP2 of this project. Additionally, these courses are:

- Available on-demand asynchronously online 24 hours a day, seven days a week.
- Provide the learner with a self-paced journey in a logical and thoughtful manner
- Accessible to all levels of learners, expanding their reach, appeal and impact on skill development

- Relevant to the renewable energy industry and contain technically accurate foundational concepts and transversal skills

Each course provides the learner an opportunity to obtain a certificate of completion that is printable and shareable online. Learners can both prove their skill attainment and be a vocal proponent for the RESkill4NetZero programme, attracting more learners to the world of renewable energy career development.

As the programme continues, we will review and add more courses that both meet our strict quality standards and support the development of skills needed to be successful in renewable energy careers.

2.3.3. InnoEnergy Urgent Courses: Relevance for the Job Market

To create the table for evaluation of the Urgent Courses against the Job Market, we used the Occupational Profiles as defined in the Grant Agreement and described in Section 2.2.3.

The complete description of the job roles can be found in Annex 1

General Energy Training Critical Roles / Occupational Profiles	Basic Concepts of Electrical Systems	Introduction to Battery Safety	Digital Product Passport Intro	End-of- Life, Second Life, and Recycling	Fin de Vida, Segunda Vida y Reciclaje (Español)
Government:					
1.Planners – white collar professionals	X	x	x		
Engineering:					
2.Renewable Energy Consultants - white collar professionals	x	x	x	x	x
3. Energy Engineers – white collar professionals	x	x	x	x	x
Manufacturing					
4. Factory Operatives / Maintenance – blue collar professionals		x			
5. Industrial Engineers - white collar professionals	x		x	x	x
Electrical					
6. Electricians (Domestic) – grey collar	x				

professionals					
7. Industrial Electricians – grey collar professionals	X				
Technicians					
8. Renewable Energy Technicians (wind / solar / geothermal / heat pumps) – blue collar professionals	X	X	X		
9. Gas technicians (biogas / hydrogen)					
10. HVAC and refrigeration technicians	X				
Operations:					
11. RE Power Plant operators – grey collar professionals	X	X		X	X
12. Health and Safety Professionals – grey collar professionals		X			
Disposal & Recycling					
13. Critical Raw Material recovery			X	X	X

Table 6: InnoEnergy Urgent Courses relevance for the Job Roles

2.3.4. InnoEnergy Urgent Courses: Relevance for the Skills Needs

For evaluating the Skill Needs against the Urgent Courses, the method as described in Section 2.2.4. was used.

Further details on how this table is created can be found in Annex 2

	Basic Concept of Electrical Systems	Introduction to Battery Safety	Digital Product Passport Intro	End-of-Life, Second Life, and Recycling	Fin de Vida, Segunda Vida y Reciclaje (Español)
Design					
RE Engineering				X	X
RE Technologies				X	X
System Design (Digital)	X				
Modelling and Simulation					
Project Management					
Sustainable Design	X			X	X
Administration, legal skills for permitting			X		

Production					
RE Manufacturing processes					
Materials used in RE Systems				X	X
Mechanical skills	X				
Quality control					
Problem solving/ Diagnostics					
Digital skills (CAD/ AR)					
Programming industrial computers and sensors					
Installation					
Electrical Engineering	X				
HVAC Engineering	X				
System Design and Sizing	X				
System Installation					
Commissioning and trouble shooting					
RE Project Management	X				
RE installation best practices, resource monitoring and management					
Operations and Maintenance					
RE Safety Protocols and permits		X			
Standards and regulations		X	X		
Diagnostic tools & system analysis	X				
Energy management					
Environmental impact				X	X
Electrical and HVAC	X				
Refrigerant leak detection					
Disposal					
Circularity of RETs			X	X	X
Life Cycle Assessments			X	X	X
Electrical and HVAC	X				
Safety and regulatory standards for disposal		X			
Circularity of renewable energy technologies			X	X	X
New business ecosystems			X	X	X
Transition Management			X	X	X

Table 7: InnoEnergy Urgent Courses relevance for the skills needs

2.3.5. Course Delivery Description

As the courses are all online there are no pictures available.

The online courses can be accessed via the link <https://reskill4net-zero.eu/> . To access the courses, the learner navigates to the Skills Platform:

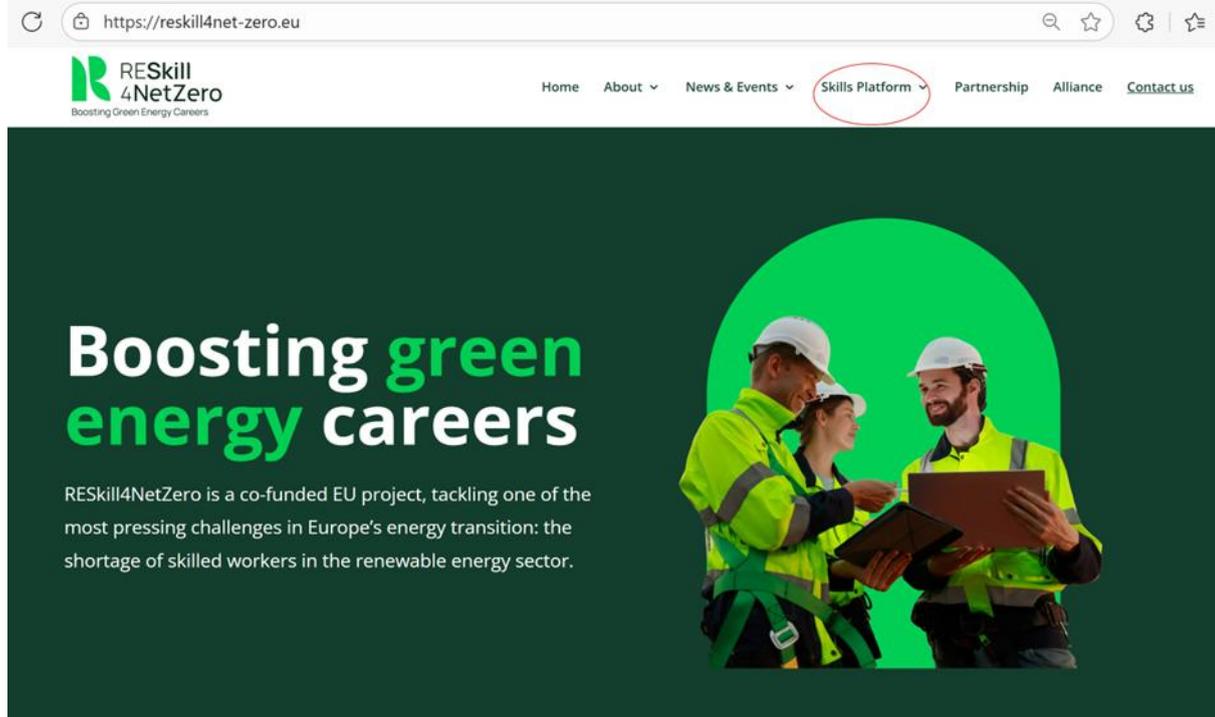


Figure 5: RESkill4NetZero platform

From there, the learner can browse the full offering of trainings available:

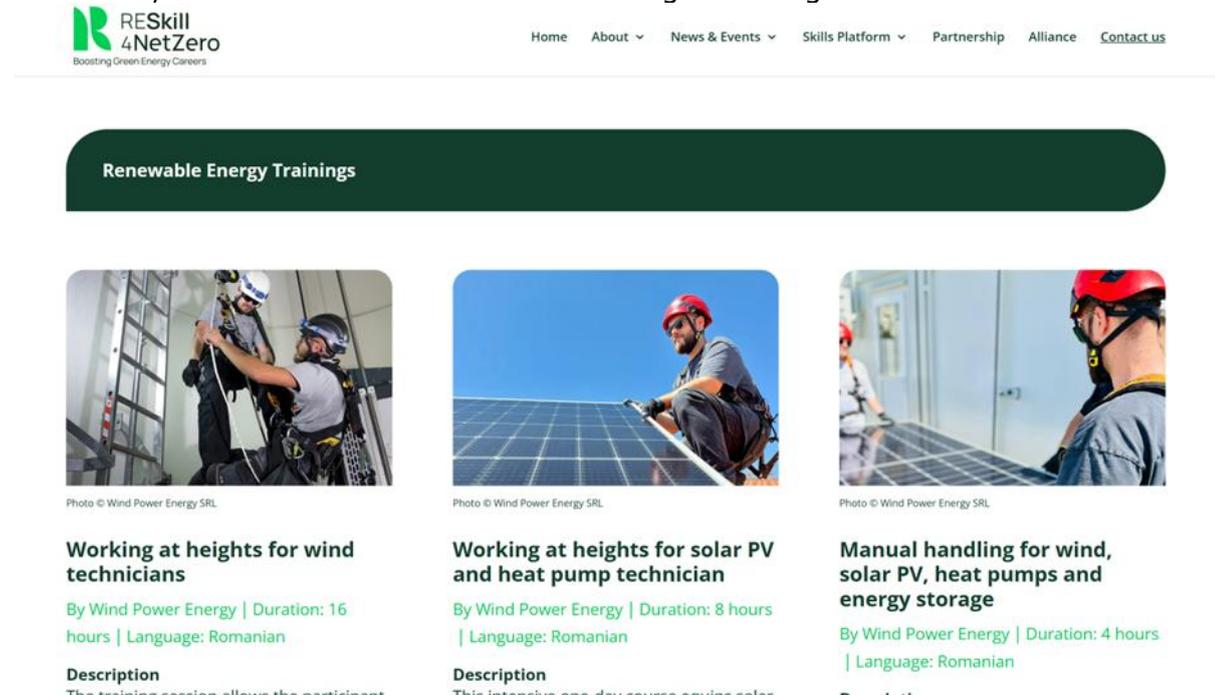
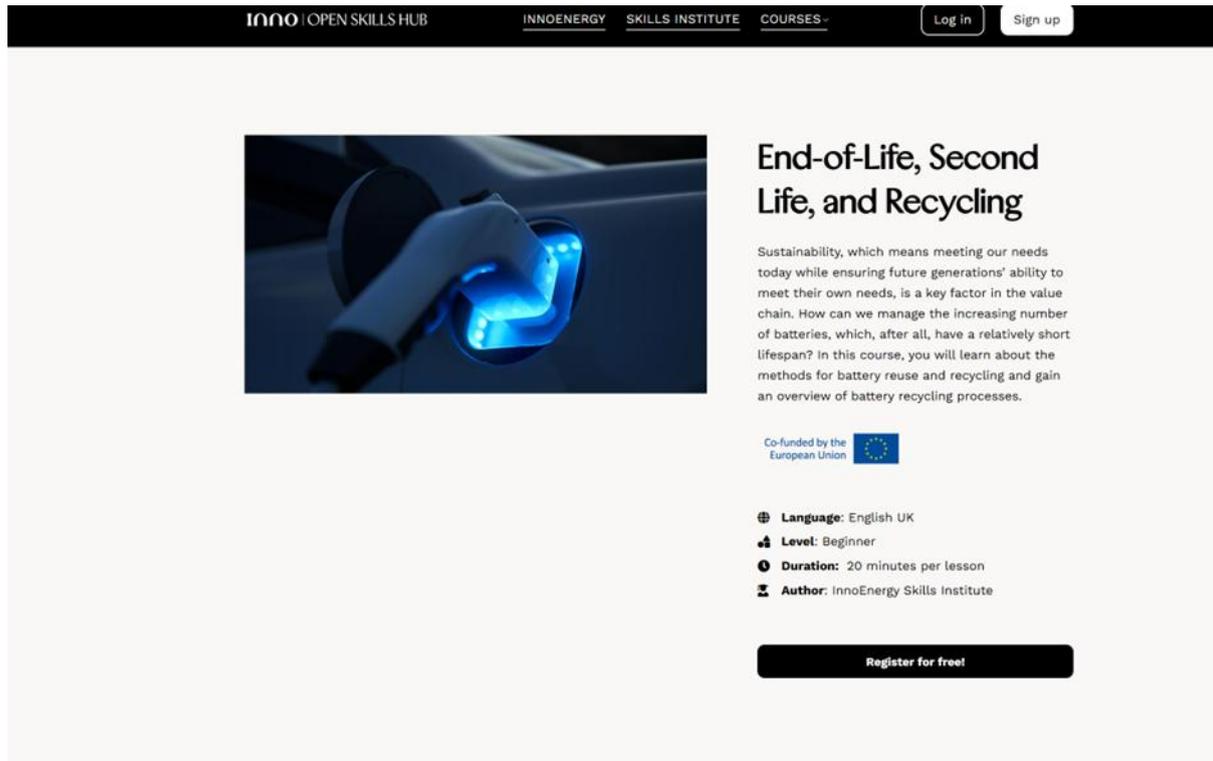


Figure 6: InnoEnergy Overview of the available courses

When an InnoEnergy training is selected, the learner is routed to our Open Skills Hub platform for

registration and to complete the course:



The screenshot shows the InnoEnergy Open Skills Hub interface. At the top, there is a navigation bar with the logo 'Inno | OPEN SKILLS HUB' and links for 'INNOENERGY', 'SKILLS INSTITUTE', and 'COURSES'. On the right side of the navigation bar are 'Log in' and 'Sign up' buttons. The main content area features a large image of a hand plugging a charging cable into a car's charging port. To the right of the image is the course title 'End-of-Life, Second Life, and Recycling' and a descriptive paragraph about sustainability and battery recycling. Below the text is a 'Co-funded by the European Union' logo. Further down, there are icons and text for 'Language: English UK', 'Level: Beginner', 'Duration: 20 minutes per lesson', and 'Author: InnoEnergy Skills Institute'. At the bottom of the course information is a black button with the text 'Register for free!'.

Figure 7: InnoEnergy Learners are guided to the InnoEnergy Open Skills Hub

Usage and completion data are collected in the InnoEnergy platform and shared weekly for tracking KPIs.

2.3.6. Course Dissemination Statistic

InnoEnergy	Total Nov 20	June 2025	July	Aug	Sept	Oct	Nov
Courses	177	26	38	46	36	15	17
Basic Concepts of Electrical Systems	98	23	25	22	19	5	4
End of Life, Second life & Recycling	19	2	5	3	4	1	4
Digital Battery Passport System: an introduction	26	1	4	9	6	4	2
Introduction to Battery Safety	20		3	6	4	3	4
Fin de la vida de las baterías: Reutilización y reciclaje	14			6	3	2	3

Table 8: InnoEnergy Urgent Courses Number of students reached

In this table the number of learners for the InnoEnergy Urgent Courses are given. The Urgent Courses of InnoEnergy are completely online. The course topics are also much more general than those from the other institutions.

2.4. OHKW Urgent Courses

2.4.1. Description of the institute

OHKW Klimajobs (OHKW)³ is the training and jobs platform of the industry initiative “OHKW – All Hands Needed for the Energy Transition.” Its mission is to accelerate the energy transition through targeted, efficient training programmes.

OHKW focus on new, specialized job roles that create efficiency in the value chain. This can be done by training for new skills or new technology; or breaking up existing training programmes into shorter units to get skilled workers more quickly into the field with more specialised knowledge. This helps to build a smart interface role between office and installation, freeing up capacity for skilled tradespeople and enabling faster deployment of renewable energy systems at scale.

2.4.2. Courses Offered as Urgent Courses

- Design and Planning of Heat Pump Systems: <https://ohkw.de/courses/planung-von-waermpumpensystemen/>
- Hydraulic Balancing: Legal Requirements, Calculation Methods & Practical Implementation: <https://ohkw.de/courses/berechnung-hydraulischer-abgleich/>
- Heat Pumps in Building Renovation: <https://ohkw.de/courses/heizungssanierung-mit-waermpumpen-in-ein-und-mehrfamilienhauser/>
- Technical Sales & Planning of Heat Pump Systems: <https://ohkw.de/courses/technischer-vertrieb/>
- Heat Pump Summer Camp: <https://ohkw.de/courses/heat-pump-summer-camp/>

2.4.3. OHKW Urgent Courses: Relevance for the Job Market

To create the table for evaluation of the Urgent Courses against the Job Market, we used the Occupational Profiles as defined in the Grant Agreement and described in Section 2.2.3.

The complete description of the job roles can be found in Annex 1

³ OHKW: <https://ohkw.de/>

Heat Pump Courses	Technical Sales and Heat Pump Planning	Heat Pump Summer Camp - Focus	Design and Planning of Heat Pump Systems	Hydraulic Balancing	Heat Pumps in Building Renovation
Government:					
1.Planners – white collar professionals	X	X	X		x
Engineering:					
2.Renewable Energy Consultants - white collar professionals	X	X	X	X	x
3. Energy Engineers – white collar professionals	X	X	X	X	x
Manufacturing					
4. Factory Operatives / Maintenance – blue collar professionals					
5. Industrial Engineers - white collar professionals			X	X	x
Electrical					
6. Electricians (Domestic) – grey collar professionals					
7. Industrial Electricians – grey collar professionals					
Technicians					
8. Renewable Energy Technicians (wind / solar / geothermal / heat pumps) – blue collar professionals			X	X	x
9. Gas technicians (biogas / hydrogen)					
10. HVAC and refrigeration technicians		X	X	X	x
Operations:					
11. RE Power Plant operators – grey collar professionals					
12. Health and Safety Professionals – grey collar professionals					
Disposal & Recycling					
13. Critical Raw Material recovery					

Table 9: OHKW Urgent Courses Relevance for the job market

2.4.4. OHKW Urgent Courses: Relevance for Skills Needs

For evaluating the Skill Needs against the Urgent Courses, the method as described in Section 2.2.4. was used.

Further details on how this table is created can be found in Annex 2.

Heat Pump Courses	Technical Sales and Heat Pump Planning	Heat Pump Summer Camp - Focus	Design and Planning of Heat Pump Systems	Hydraulic Balancing	Heat Pumps in Building Renovation
Design					
RE Engineering	X	X			
RE Technologies	X	X			
System Design (Digital)	X	X			
Modelling and Simulation	X	X			
Project Management	X	X			
Sustainable Design	X	X			
Administration, legal skills for permitting	X	X			
Production					
RE Manufacturing processes					
Materials used in RE Systems					
Mechanical skills					
Quality control					
Problem solving/ Diagnostics					
Digital skills (CAD/ AR)					
Programming industrial computers and sensors					
Installation					
Electrical Engineering					
HVAC Engineering			X	X	X
System Design and Sizing	X	X	X	X	X
System Installation			X	X	X
Commissioning and trouble shooting			X	X	X
RE Project Management	X	X			X
RE installation best practices, resource monitoring and management					
Operations and Maintenance					
RE Safety Protocols and permits					
Standards and regulations			X	X	X
Diagnostic tools & system analysis			X	X	X
Energy management			X	X	X
Environmental impact			X		X
Electrical and HVAC			X	X	X
Refrigerant leak detection					
Disposal					
Circularity of RETs					
Life Cycle Assessments					

Table 10: OHKW Urgent Courses Relevance for the Skills Needs

2.4.5. Course dissemination photos



Figure 8: OHKW Heat pump Course June 30, Berlin



Figure 9: OHKW Heat pump course started August 24, Berlin



Figure 10: OHKW Heat pump course started August 24, Berlin



Figure 11: OHKW Heat pump course started September 12, Berlin

2.4.6. Course Dissemination Statistics

OHKW	Total Nov 20	June	July	Aug	Sept	Oct	Nov
Courses	58	10	0	20	17	x	11
Design and Planning of Heat Pump Systems	6	6	0				
Hydraulic Balancing Calculation	4	4	0	0			
Heat Pumps in Building Renovation							
Technical Sales & Planning of Heat Pump Systems	11						11
Heat Pump Summer Camp	37			20	17		

Table 11: OHKW Urgent Courses Number of Students Reached in 2025

Table 11 gives an overview of the learners reached with the Urgent Courses at OHKW.

OHKW had already an outline for the courses defined at the start of the project, but still needed to create the content, identify the trainers and acquire participants. As this required time to execute, OHKW started disseminating the courses in June 2025.

There are three different types of courses, tailored to different target groups within the industry. First, there are short format courses for upskilling, either in person or online, and available for governmental subsidies for certified installers, energy consultants and building planners. Secondly, there is an online course over a longer time period for people who want to learn alongside their job. Finally, there are hands on courses such as the Heat Pump Camps which are intensive, in person trainings that also serve as an introduction to the industry and career orientation.

2.4.7. Course Evaluation by the learners

OHKW asked participants to answer a questionnaire at the end of the training.

Please find the statistics in Figures 12, 13 and 14. The survey shows that participants value the course as an added value to their career path. The practical focus is particularly appreciated.

Did the camp help you with your career orientation or future path?

17 Antworten

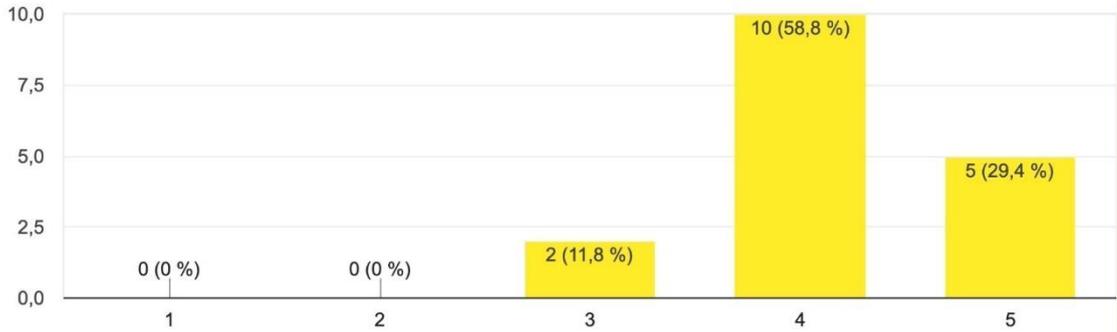


Figure 12: OHKW Learner Feedback: did the camp help your career orientation or future path? (1=no, 5=yes)

How likely are you to recommend the camp?

17 Antworten

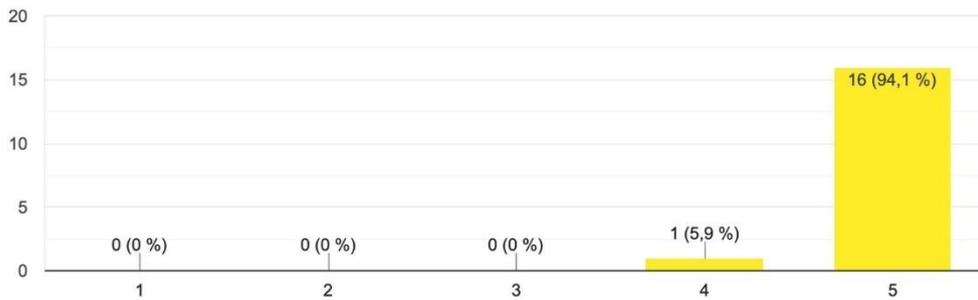


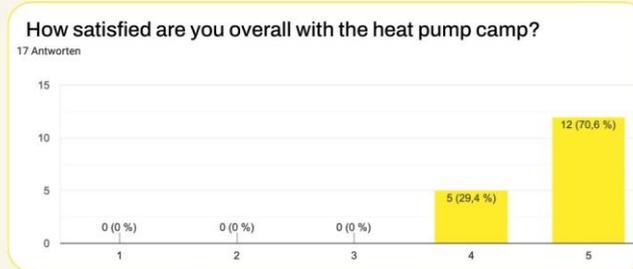
Figure 13: OHKW Learners Feedback: how likely will you recommend the camp (1: not very likely up to 5: very likely)

Participants Feedback

What do the participants say about the OHKW Heat Pump Camps?

“It was great that there was so much input on theory, design, planning, funding, and sales.”

“We got a lot of practical knowledge from several experts.”



“The company visits — super exciting! Now you know what’s going on in the industry.”

“Excellent expertise of the speakers and organizers.”

“The many different speakers, the entire day at Bosch (that’s where I learned the most), conversations with participants.”

“I really appreciated the chance to get in direct contact with several companies. The professional exchange with people who are happy to share their knowledge. The friendly, positive atmosphere as well as the organization by the event team :)”

Figure 14: OHKW Learners Feedback What do participants say about the OHKW Heat Pump Camps?

And on the question **“What did you particularly like?”**, these are some of the answers given, which indicate the positive evaluation of the participants.

We received a lot of practical knowledge from several experts

The content

The expertise of the speakers and organizers

The day at Bosch and getting to see the devices and the different types of heat pumps

The many different speakers, the entire day at Bosch (that’s where I learned the most), conversations with participants

The company visits — super exciting! Now I know what’s going on in the industry

Know-how, exchange, networking

Close to practical experience

That there was a lot of input on theory, design, planning, funding, and sales

That there were many different aspects in a short time and it was concise but very informative

Excursions: a different location every day

Different perspectives, openness to questions, mix of career changers and students

The event was well organized, full of information, and very friendly

Constant change of locations, heat pump technology and details at Bosch, background and context on legislation and politics, subsidies and profitability analysis, heating load calculation and concrete examples, tools for various areas, pleasant and great energy in the group, group exchange was actively encouraged!

The opportunity to get in direct contact with several companies. The professional exchange with people who are happy to share their knowledge. The friendly, positive atmosphere as well as the organization by the event team :)

Finally; Participants were asked to share something they had learned over the week on Social Media. Here are some of their posts: on LinkedIn:

https://www.linkedin.com/posts/arun-lertsumitkul_waermepumpe-decarbonisation-climatesolutions-activity-7381659716390858753-ZCOZ?utm_source=share&utm_medium=member_desktop&rcm=ACoAABYuhGcBVpMOFzHEdOvFB-jZaepSDHAhkh8

Arun Lertsumitkul:

A couple of weeks ago I had the pleasure of diving into the world of Heat Pumps for a 5 day Bootcamp organised by Amber Riedl and OHKW - Ohne Hände keine Wende 🚀

🔥 What even is a Heat Pump (hashtag#WärmePumpe) ? I had near-zero idea, but as I have since discovered, they provide energy efficient heating to hundreds of thousands of buildings across Europe and have been a "hot" topic in Germany. Think of a reverse fridge, not burning fossil fuels like oil and gas to generate heat from scratch, but shifts heat from outside sources (air, water or ground) using electricity ⚡ Think: renewable electricity - and therefore are a central tool in the mission to decarbonise buildings. 🌱 🏠

We heard informative talks from co2online GmbH (nonprofit), STIEBEL ELTRON Group, dsb, NetZero Academy and autarc (YC S24) helping to demystify the technologies, business models and communication best practices around this politicised piece of technology, including practical frameworks and case studies.

I heard for the first time about individual renovation plans (iSFP) and energy consulting; as well as the economic benefits of heat pumps for the household - spoiler alert: they have already been cheaper than gas heating systems to operate since 2022 💰

I walked away from this intensive programme with a new tool in my understanding of the hashtag#decarbonisation and hashtag#climatesolutions landscape. Thank you Amber

Riedl and Rosa Berndt for organising this amazing course, and Sebastian Metzger, Niclas Kern, Christian Schulze Friedrich Schlüter, Johannes Dörr, Clemens Riedl for sharing your expertise.

https://www.linkedin.com/posts/julian-gl%C3%A4ser-b6268b187_waermepumpe-waermewende-klimaschutz-activity-7379120531914162180-6-mB?utm_source=share&utm_medium=member_desktop&rcm=ACoAABYuhGcBVpMO-fzHEdOvFB-jZaepSDHAhkh8

Julian Glaser: Imagine putting €1 into your heating and getting €3 worth of heating power in return. 💰 That's exactly what the #heatpump makes possible by using renewable energy, playing a key role in the #heattransition. It's not only economically efficient, but can also be powered by 100% renewable electricity, thus contributing to #climateprotection. 🌍

Last week I had the pleasure of attending the OHKW - Ohne Hände keine Wende (Without Hands, No Turnaround) heat pump summer camp in Berlin. There, we delved deeply into the various technologies, business models, and communication strategies surrounding heat pumps. We also explored why heat pumps have been so demonized by many media outlets and examined the truth behind the numerous concerns and myths surrounding the technology and its subsidy policies – spoiler alert: very little! 💡

The five-day programme was diverse, informative, and engaging:

📊 Practical sessions on calculating heating loads, hydraulic balancing, and designing heat pumps with autarc (YC S24)

🏢 Company visits to STIEBEL ELTRON Group and dsb, including technology tours, case studies, and an introduction to planning tools

📄 Insights into political frameworks and funding opportunities from co2online gGmbH (non-profit)

A huge thank you to Amber Riedl and Rosa Berndt for leading this fantastic course and to Sebastian Metzger, Niclas Kern, Friedrich Schlüter, Johannes Dörr, Clemens Riedl, and Christian Schulze for your expert contributions 🙌

🌱 I'm leaving with many new ideas and the conviction that heat pumps are not simply a heating technology, but a key lever for our sustainable future, from both an economic and climate policy perspective. Because almost a fifth of Germany's emissions still come from heating buildings and hot water.

⚡ Let's change that!

2.5. WPE (RENEWACAD) Urgent Courses

2.5.1. Description of the institute

Wind Power Energy SRL⁴ is a nationally and internationally certified training centre to provide courses for training, qualification, and re-qualification in the field of renewable energy sources, predominantly focusing on courses for the wind, photovoltaic and storage industries.

- More than 5000 technicians under training every year
- Over 12 years of certified trainings in wind, PV and battery storage
 - Re-skilling and Up-skilling initiatives;
 - Occupational Standards and Jobs registry submissions creation;
 - GWO Wind and PV Certifications
 - An educational infrastructure with more than 7 locations ;
 - Mobile Training & Safety Centre concepts;
- No degree required
- No prior experience required
- Industry Experienced instructors
- Accredited courses by National Agencies
- Payment available in instalments

For the fall back scenario Monsson Energy Nordics (MEAB) a company linked to WPE (RENEWACAD) was so kind to disseminate Urgent Courses. Monsson Energy Nordics (MEAB) specializes in developing, delivering, and operating Battery Energy Storage Systems (BESS) tailored for northern climates. Combining Monsson Group's European expertise with Nordic market insight, they enable a more resilient and balanced renewable energy system across the region⁵.

2.5.2. WPE (RENEWACAD) Courses Offered as Urgent Courses

In light with the current strategy to increase the growth of the renewable installed capacity in Europe, more qualified technicians are needed urgently for installation and maintenance of wind farms, photovoltaic plants and BESS facilities. The increased need of such qualified and skilled people is now urgent based on the new capacities that are under installation and will be in

⁴ Wind Power Energy SRL: WPE (RENEWACAD): www.renewacad.eu

⁵ For more information, please visit their website: <https://monssonenergynordics.com/>

operation soon:

- Working at heights for wind technicians; (Course 1)
<https://renewacad.eu/en/reskill4netzero-courses-det/1/1/working-at-heights-for-wind-technicians/>
- Working at heights for PV technicians/heat pumps; (Course 2)
<https://renewacad.eu/en/reskill4netzero-courses-det/1/2/working-at-heights-for-pv-technicians-heat-pumps/>
- Manual handling for: wind, PV, heat pumps, energy storage; (Course 3)
<https://renewacad.eu/en/reskill4netzero-courses-det/1/3/manual-handling-for--wind--pv--heat-pumps--energy-storage/>
- Basic electrical and mechanical training for wind, PV, heat pumps, energy storage: (Course 4): <https://renewacad.eu/en/reskill4netzero-courses-det/1/4/basic-electrical-and-mechanical-training-for-wind--pv--heat-pumps--energy-storage/>
- Commercial & Technical Aspects of Storage Solutions (Monsson Energy Nordics (MEAB)):
<https://monssonenergynordics.com/energy-solutions/training-center/>

2.5.3. WPE (RENEWACAD) Relevance for the job market

To create the table for evaluation of the Urgent Courses against the Job Market, we used the Occupational Profiles as defined in the Grant Agreement and described in Section 2.2.3.

The complete description of the job roles can be found in Annex 1

Wind Turbine Courses	Course 1	Course 2	Course 3	Course 4
Government:				
1.Planners – white collar professionals	X	X	X	
Engineering:				
2.Renewable Energy Consultants - white collar professionals	X	X	X	
3. Energy Engineers – white collar professionals	X	X	X	X
Manufacturing				
4. Factory Operatives / Maintenance – blue collar professionals			X	X
5. Industrial Engineers - white collar professionals	X	X	X	X
Electrical				
6. Electricians (Domestic) – grey collar professionals				
7. Industrial Electricians – grey collar professionals	X	X	X	X
Technicians				
8. Renewable Energy Technicians (wind / solar / geothermal / heat pumps) – blue collar	X	X	X	X

professionals				
9. Gas technicians (biogas / hydrogen)			X	
10. HVAC and refrigeration technicians			X	X
Operations:				
11. RE Power Plant operators – grey collar professionals	X	X	X	X
12. Health and Safety Professionals – grey collar professionals	X	X	X	
Disposal & Recycling				
13. Critical Raw Material recovery			X	

Table 12: WPE (RENEWACAD) Urgent Courses Relevance for the job market

2.5.4. WPE (RENEWACAD) Urgent Courses: Relevance for Skills Needs

For evaluating the Skill Needs against the Urgent Courses, the method as described in Section 2.2.4. was used.

Further details on how this table is created can be found in Annex 2.

Wind Turbine Courses	Course 1	Course 2	Course 3	Course 4
Design				
RE Engineering				X
RE Technologies				X
System Design (Digital)				X
Modelling and Simulation				X
Project Management				X
Sustainable Design				
Administration, legal skills for permitting				
Production				
RE Manufacturing processes	X	X		X
Materials used in RE Systems			X	X
Mechanical skills	X	X	X	X
Quality control	X	X		X
Problem solving/ Diagnostics	X	X		X
Digital skills (CAD/ AR)				X
Programming industrial computers and sensors			X	X
Installation				
Electrical Engineering	X	X		X
HVAC Engineering	X	X	X	X
System Design and Sizing	X	X		X
System Installation	X	X	X	X
Commissioning and trouble shooting	X	X	X	X
RE Project Management				
RE installation best practices, resource monitoring and management	X	X	X	X
Operations and Maintenance				

RE Safety Protocols and permits	X	X	X	
Standards and regulations				
Diagnostic tools & system analysis	X	X	X	X
Energy management			X	
Environmental impact				
Electrical and HVAC			X	X
Refrigerant leak detection				
Disposal				
Circularity of RETs	X	X	X	X
Life Cycle Assessments				
Electrical and HVAC	X	X	X	X
Safety and regulatory standards for disposal	X	X		
Circularity of renewable energy technologies			X	X
New business ecosystems				
Transition Management				

Table 13: WPE (RENEWACAD) Urgent Courses Relevance for the skills needs

2.5.5. Course dissemination photos



Figure 15: WPE (RENEWACAD) Basic electrical and mechanical training for wind, PV, heat pumps, energy storage



Figure 16: WPE (RENEWACAD) Manual Handling for wind, PV, heat pumps, energy storage



Figure 17: WPE (RENEWACAD) Working at heights for PV technicians heat pumps



Figure 18: WPE (RENEWACAD) Working at heights for wind technicians



Figure 19: WPE (RENEWACAD) Monsson Energy Nordics Commercial & Technical Aspects of Storage Solutions

2.5.6. Course Dissemination Statistics

WPE (RENEWACAD)	Total Nov 20	March	Apr	May	June	July	Aug	Sept	Oct	Nov
Practical Courses	250			36	52	46	37	18	42	19
Working at heights for PV technicians/heat pumps	68			24	14	30			8	
Basic electrical and mechanical training for wind, PV, heat pumps, energy storage.	6			6						
Manual handling for: wind, PV, heat pumps, energy storage	82			6	16	8	17	10	25	
Working at heights for wind technicians	75				22	8	20	8	17	
Monsson Energy Nordics	19									19

Table 14: WPE (RENEWACAD) Urgent Courses Number of Students Reached in 2025

Table 14 gives an overview of the learners reached with the Urgent Courses by WPE (RENEWACAD).

WPE (RENEWACAD) had the courses readily available, but the duration was too long. They reworked the courses into a shorter format, which clearly led to a lot of interested learners.

Example of courses, their dates and participants is given in table 15.

Course Name	Number of participants	Course Period
Working at heights for PV technicians heat pumps	12	14-15.05.2025
Working at heights for PV technicians heat pumps	12	21-22.05.2025
Manual handling for wind PV heat pumps energy storage	6	26-28.05.2025
Manual handling for wind PV heat pumps energy storage	6	27.05.2025
Working at heights for PV technicians heat pumps	14	10-11.06.2025
Manual handling for wind PV heat pumps energy storage	10	10.06.2025
Working at heights for wind technicians	11	11-12.06.2025
Manual handling for wind PV heat pumps energy storage	6	25.06.2025
Working at heights for wind technicians	11	19-20.06.2025
Manual handling for wind PV heat pumps energy storage	8	10.07.2025
Working at heights for PV technicians heat pumps	7	14-15.07.2025
Working at heights for PV technicians heat pumps	8	17-18.07.2025
Working at heights for PV technicians heat pumps	8	24-25.07.2025

Working at heights for PV technicians heat pumps	7	28-29.07.2025
Working at heights for wind technicians	8	08-09.07.2025
Working at heights for wind technicians	10	13-14.08.2025
Working at heights for wind technicians	10	26-27.08.2025
Manual handling for wind PV heat pumps energy storage	5	19.08.2025
Manual handling for wind PV heat pumps energy storage	12	26.08.2025
Working at heights for wind technicians	10	26-27.08.2025
Working at heights for wind technicians	8	18-19.09.2025
Manual handling for wind PV heat pumps energy storage	10	23.09.2025
Working at heights for wind technicians	8	07.10.2025
Manual handling for wind PV heat pumps energy storage	5	10.10.2025
Working at heights for wind technicians	9	14-15.10.2025

Table 15: WPE (RENEWACAD) Urgent Courses Schedule

2.5.7. Course Evaluation by the learners

After the courses were finished, the learners were asked to fill out an evaluation document as shown in Figure 20.

	Feedback form for participants <u>Opinia participantilor</u>			Cod	F-FB-9.1.2
				Editie	3
				Revizie	0
				Data	01.10.2024
				Pag.	1 / 1

Your opinion is important to us! <u>Opinia dumneavoastra este importanta pentru noi!</u>					
Questionnaire feedback for the course: <u>Training feedback questionnaire:</u>	<input type="checkbox"/> FA / FAR <input type="checkbox"/> EFA / EFAR <input type="checkbox"/> FAW / FAWR <input type="checkbox"/> MH / MHR <input type="checkbox"/> WAH / WAHR <input type="checkbox"/> WAH/MH WAHR/MHR <input type="checkbox"/> SS / SSR <input type="checkbox"/> ART / ARTR <input type="checkbox"/> BR		<input type="checkbox"/> BTTE <input type="checkbox"/> BTTH <input type="checkbox"/> BTTM <input type="checkbox"/> BTTI <input type="checkbox"/> BTTB <input type="checkbox"/> BaSC / ES / PFS <input type="checkbox"/> BaSC-R / ES-R PFS-R <input type="checkbox"/> SLS <input type="checkbox"/> ONL / OFL		
	How did you find the following? <u>Cum vi s-au parut urmatoarele aspecte?</u>	 1	 2	 3	 4
Received information <u>Informatiile primite</u>					
Organisation of the training center <u>Organizarea centrului de training</u>					
Communication with Renewacad staff <u>Comunicarea cu personalul Renewacad</u>					
Training dynamics <u>Dinamica cursului</u>					
Interaction with trainers <u>Interactiunea trainerului</u>					
The quality of the teaching materials <u>Calitatea materialelor de predare</u>					
Concluzii si alte recomandari/Conclusions and other recommendations:					
Would you recommend the event/course to others? <u>Ne veti recomanda si altor parteneri?</u>			<input type="checkbox"/> Yes / Da		<input type="checkbox"/> No / Nu
Data / Date					

Figure 20: WPE (RENEWACAD) Learners Feedback Document

In total, 166 participants completed the feedback questionnaire.

	1	2	3	4	5	TOTAL
Received information					166	166
Organization of the training centre					166	166
Communication with RESS staff					166	166
Training dynamics				1	165	166
Interaction with trainers					166	166
The quality of the teaching materials					166	166

Table 16: WPE (RENEWACAD) Summary of the learners feedback

The overall satisfaction is extremely high, with nearly all aspects (information received, organization, communication, trainer interaction, and quality of materials) rated 5/5. Only one participant gave a 4 for training dynamics, while all others rated 5, resulting in an average score of 4.99/5 for that criterion.

Here are some illustrative quotes from participants:

- “The course was very well structured and directly applicable to my work.”
- “Trainers were supportive and explained clearly, which made the learning process very effective.”
- “I appreciated the organization and the practical focus of the sessions.”

2.6. Publication on the RESkill4NetZero platform

As mentioned in *Section 2.1. Project Management for WP4 Course Criteria and Evaluation* reaching the target of 400 learners was crucial, Therefore, we implemented two key strategies to ensure success. Firstly, we activated the fallback scenario described earlier. Secondly, we established close collaboration with WP5 Marketing and Communication. As WP5 Lead was also attending our bi-weekly meetings, we were closely involved in setting up the RESkill4NetZero Website, where our courses would be published. The website serves as a central hub, directing interested users to the respective institution's website, where a more detailed course description is provided.

To ensure consistency and clarity, we agreed on a standardised format for presenting the course information on the Website:

- Course Title
- Brief Description (2–3 sentences explaining the purpose and content)
- Estimated Date of Launch, start date (if applicable)
- Duration (e.g. number of hours, days or weeks)
- Target Audience (e.g. workers, jobseekers, SMEs)
- Cost (if applicable)
- Format (online, hybrid, in-person)
- Course Image (more instructions to be shared)

The WP5 team successfully launched the website in July 2025:

Website RESkill4NetZero: <https://reskill4net-zero.eu/>

2.7. Marketing and communication activities

From the start of the project, we decided to implement two parallel communication strategies to reach our target audience effectively.

1. Institutional Channels

Each participating institute used its own marketing and communication channels, applying the required EU branding (“Supported by the EU”). This approach was driven by two key factors:

- The short timeframe to reach 400 learners meant we could not wait for the RESkill4NetZero website infrastructure to be fully operational.
- The courses were designed for specific audiences in specific countries, and the institutions delivering the Urgent Courses already had established connections with their target groups.

An example of the promotion OHKW made via their own channels for the Urgent courses, see Figure 21.

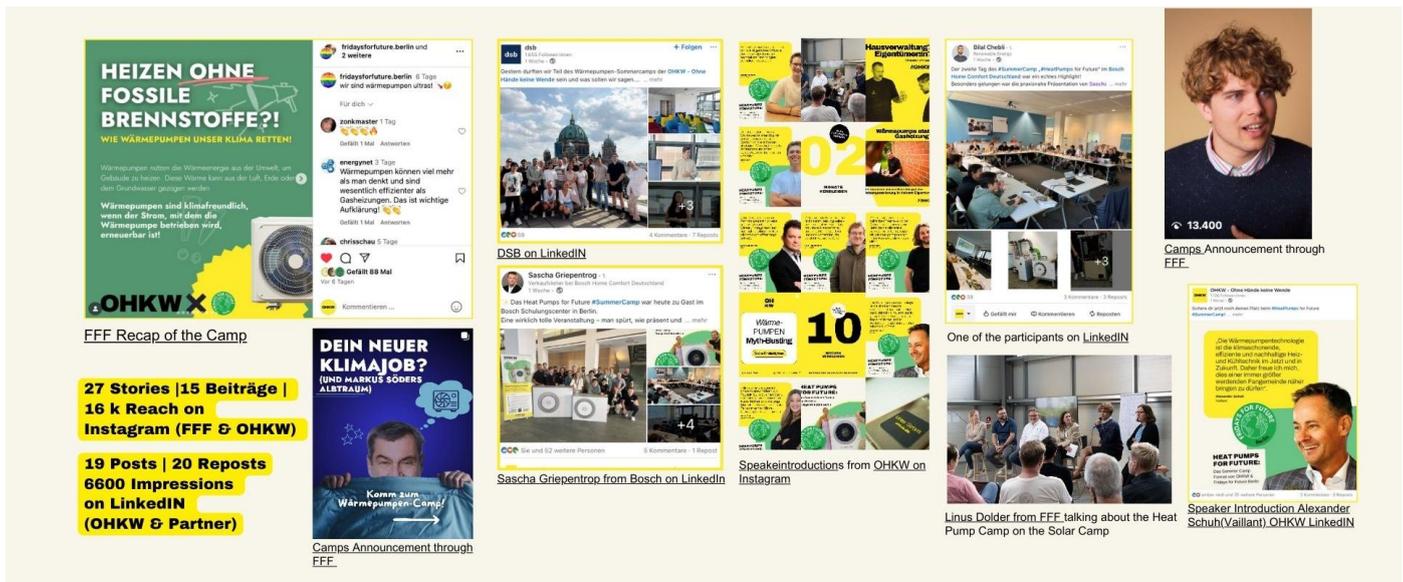


Figure 21: OHKW Marketing in Media and on Social Media

As an example of another promotional campaign, WPE (RENEWACAD) has launched a campaign for two training sessions in Sweden scheduled for November 2025. The campaign details and registration information can be found here: [Monsson Energy Nordics Campaign] (<https://monssonenergynordics.com/campaign/>). The training sessions are planned for November 13 and 26, 2025.

2. RESkill4NetZero Communication Channels

In parallel, we leveraged the broader communication channels of the RESkill4NetZero platform, which are distributed across Europe. These channels allowed us to reach additional audiences beyond those already targeted by the individual institutions.

Some numbers (as of the end of October 2025) on the results:

- LinkedIn:
 - o 8500 impressions,
 - o 320 reactions,
 - o 12 reposts
 - o 163 Followers
 - o 366 visitors on the page
 - o 22 posts
- Project Page:
 - o 61 interactions on the page
 - o 173 views

The results are expected since the project started only recently to produce results relevant to be communicated. But we need to increase efforts when it comes to promoting all our posts to attract more views.

3. Delivery results and Lessons learned

3.1. Course Dissemination Statistics

Organisation		Realized Nov 20	Nov 24	Dec	Mar 25	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
CDC		74	16	5	16	8	15	x	x	x	14	x	x
WPE (RENEWACAD)		250					36	52	46	37	18	42	19
OHKW		58					0	10	0	20	17	0	11
InnoEnergy Spain		14					0			6	3	2	3
fall back scenario	IE	163					0	26	38	40	33	13	14
	Monsson	19							x		0	0	19
Totalling		578	16	5	16	8	51	88	84	103	85	57	66

Table 17: Urgent Courses Overall Number of Students Reached from November 2024 – November 2025

Table 17 gives a consolidated overview of the numbers of learners reached with the Urgent Courses. CDC had the Urgent Courses available at the beginning of the project, so they were the first to start the dissemination. The other organisations needed time to create Urgent Courses out of the existing material. Starting from May 2025 onwards all Urgent Courses were ready to start the dissemination.

The next big step was the availability of the RESkill4NetZero website where the courses were published, reaching a broader public than the individual organisations.

The target number of learners set at 400 was reached and exceeded. .

3.2. Challenges and Lessons Learned

The proactive and close collaboration between the institutes helped successfully to achieve the targets.

At the same time, some observations and lessons learned were identified:

- The need to adapt content to participants with different prior knowledge levels.

- The changing subsidy landscape : The majority of the OHKW courses were available for subsidies for specific target groups in Germany, but only until the end of September. This led to a lack of continuous registration.
- Keeping engagement high in online/flexible formats.
- Ensuring constant alignment of content with industry needs and feedback received. This is of course a continuous work to keep track of the evolutions in the industrial sectors targeted by the Urgent Courses. It will need a further monitoring to keep the Urgent Courses updated during the lifetime of these courses.
- Were the Urgent Courses addressing the right target groups? In this project the Urgent Courses were selected based on the pre-defined Skills and Job Roles. Of course, these criteria which were part of the Grant Agreement were based on market knowledge of the partners in the project. On the other hand, the education institutes who delivered the Urgent Courses are working in the Learning and development market and have as such a good feeling for the courses which are requested in the reskilling market. So even as there was no prior market study to launching the Urgent Courses, the fact that 400 learners were reached in a relative short time shows that the delivery topics and format attracted learners.
- The courses which are targeting very specific subjects, such as the courses from CDC, OHKW and WPE (RENEWACAD) seem to attract more learners than the general courses offered by InnoEnergy. This is an important observation as input for the creation of the courses later in this project.
- The courses which are in the national language seem to be more attractive. CDC, OHKW and WPE (RENEWACAD) / Monsson Energy Nordics are giving the courses in the local language, respectively French/German, German, Romanian/ Swedish. The previous observation, see above, stated that the more specific the courses are, the more attractive. These two aspects, very concrete course topics and available in the local language seem to be important driving factors for attracting learners to the Urgent Courses.
- The courses distributed by CDC, OHKW and WPE (RENEWACAD) are also targeted to a quite local public. That aspect seems also important in distributing courses, namely, to have a very clear link to the local requirements and needs.
- The courses distributed by CDC, OHKW and WPE (RENEWACAD) are also involving a face-to-face component. This seems to be very important for the learners as their feedback indicates.
- The online courses of InnoEnergy which are more general in nature and in English probably attract another kind of learners than the targeted in the Urgent Courses.
- With the first steps to deliver the Urgent Courses, we have set a first significant step in disseminating the courses to be produced later in this project.

- For this urgent phase, partners self-reviewed and identified courses that targeted the urgent skills and jobs. As we move into the later phases of the project, the trainings and courses we include as relevant and covering the RS4NZ Curricular Framework (which is the output of WP3) will need a path for confirming that the courses and their content do indeed deliver the required skills. The challenge will be to ensure that content providers will align their content and programmes to the RS4NZ curriculum framework (WP3 output)
- There is not a right way to train – some roles and skills lend themselves to easy online training, some do not. We should aim for a variety of learning modalities and structures that target a great variety of career levels to ensure the greatest scope and breadth of reach and flexibility. Attempts to dictate the “right” teaching modality will result in equity and access issues.
- Online and/or asynchronous modes of general and transversal skill development, while not necessarily the sort of courses to gain enormous traction in this phase, should be dismissed. The lesson learned is not to let one short urgent release of existing courses drive decisions about a complete and total Renewable Energy Curriculum that encourages the development of multiple paths to career success, prosperity and ultimately, net zero.

With the first steps to deliver the Urgent Courses, we believe that we have set a first significant step in disseminating the courses to be produced later in this project.

Annex 1: Job Roles relevance for the job market

REMARK evaluation against the Occupational Profiles -as defined in the project description

We used the following description of the job roles.

Government:

1. Planners – white collar professionals

This category of workers includes urban planners, energy managers and regulators, which need to be trained on all aspects of RES technology, installation best practices, resource monitoring and management, with a view of promoting sustainable integration of renewable energy resources in energy planning strategies and local development.

Engineering:

2. Renewable Energy Consultants - white collar professionals

The occupational profile for this role involves an engineer specialized in designing renewable energy plants, including solar, wind, geothermal, and hybrid projects. This professional is responsible for selecting plant locations, determining panel orientation, and designing geothermal heat pump systems with a consideration for geological aspects. Knowledge of the permitting process across all renewable energy sources (RES) is crucial. With the growth in renewable projects, there's a need to both train and attract more engineers and high-level STEM professionals into renewable energy careers. Planning engineers also play a key role in ensuring the effective delivery of heat pump installations in multi-family and commercial buildings.

3. Energy Engineers – white collar professionals

Energy Engineers in the renewable sector are increasingly required to upskill in emerging areas such as circularity of renewable energy technologies, digitalization and new business ecosystems, transition management, systemic thinking, and leadership. These professionals must adapt to new technologies, explore innovative business models, and look beyond traditional financing streams. Upskilling in these areas is crucial for addressing the complexities of renewable energy projects and leading the sector towards sustainable and efficient energy solutions.

Manufacturing

4. Factory Operatives / Maintenance – blue collar professionals

Factory Operatives and Maintenance professionals, categorized as blue-collar workers, are pivotal in the production of new clean technologies, such as solar PV modules. These roles span across all skill levels, from operators to technicians, and there's a notable demand in sectors like solar PV module factories in Germany. The need emphasizes the importance of staffing in manufacturing facilities for clean technologies, underscoring a critical area for workforce development and training to meet the industry's growing demands.

5. Industrial Engineers - white collar professionals

Industrial Engineers in the clean technology manufacturing sector are essential for researching new technologies, designing industrial products, and managing factories with Industry 4.0 technologies.

Electrical

6. Electricians (Domestic) – grey collar professionals

Domestic Electricians, classified as grey-collar professionals, face a structural shortage due to multiple factors including the unattractiveness of VET, misconceptions about technical careers, and issues with training centers such as capacity, funding, and distribution. Addressing the gender dimension is also crucial. Modern electricians need to evolve into "system integrators" with skills in integrating Distributed Energy Resources (DER) technologies and digital tools like smart inverters. The training landscape, including public and company-provided courses, requires evaluation for adequacy and alignment with industry needs. Additionally, distinguishing between low and high voltage electrician profiles is necessary due to differing skill sets required for residential installations versus large-scale wind and solar PV farms.

7. Industrial Electricians – grey collar professionals

An Industrial Electrician is a specialized role focusing on the installation, maintenance, and repair of electrical systems in industrial settings. This professional is adept at working with high-voltage systems, programmable logic controllers (PLCs), and other complex machinery found in manufacturing plants, power plants, and other industrial facilities. They ensure these systems operate efficiently, safely, and in compliance with regulatory standards. Continuous education on emerging technologies and safety protocols is crucial for Industrial Electricians to adapt to the evolving demands of the industry.

Technicians

8. Renewable Energy Technicians (wind / solar / geothermal / heat pumps) – blue collar professionals

Renewable Energy Technicians, encompassing wind, solar, geothermal, and heat pump specialists, are pivotal blue-collar professionals in the green energy sector. Their roles span from conducting environmental-safe drilling and installing borehole heat exchangers to welding pipes and setting up control systems. Heat Pump installers, as detailed in the HP4All Project, require a blend of technical, customer-oriented, and business competencies. The sector offers significant reskilling/upskilling opportunities for those transitioning from fossil fuel industries. The demand for these technicians is growing, highlighting the need for standardized training to quickly upskill and reskill workers, addressing the industry's rapid expansion and quality requirements.

9. Gas technicians (biogas / hydrogen)

Gas Technicians specializing in biogas and hydrogen play a pivotal role in renewable energy, focusing on the installation, maintenance, and monitoring of gas systems. They ensure these systems operate efficiently, safely, and in compliance with environmental standards. Their expertise supports sustainable production and use of biogas and hydrogen as alternative energy sources, contributing to energy diversification and decarbonization efforts. Continuous training on emerging technologies and safety protocols is essential to meet the sector's evolving demands.

10. HVAC and refrigeration technicians

HVAC and Refrigeration Technicians are specialized professionals in the renewable energy sector focused on the installation, maintenance, and repair of heating, ventilation, air conditioning, and refrigeration systems. They play a crucial role in integrating new technologies into existing systems, ensuring energy efficiency and environmental compliance. These technicians are also vital in the wind energy sector, particularly in maintaining and cooling generators. The profile emphasizes the importance of continuous education, adaptation to new technologies, and the expansion of professional attractiveness to meet the evolving demands of the industry.

Operations:

11. RE Power Plant operators – grey collar professionals

RE Power Plant Operators, categorized as grey-collar professionals, are highly skilled workers responsible for the operation and maintenance (O&M) of renewable energy (RE) power plants, including large-scale projects and manufacturing facilities. Their role demands proficiency in programming industrial computers and sensors, particularly in SCADA systems and PLCs, essential for the efficient and safe operation of facilities like biogas plants. Continuous monitoring and frequent training are crucial to stay abreast of emerging technologies and O&M best practices, ensuring the uninterrupted operation of renewable energy plants.

12. Health and Safety Professionals – grey collar professionals

Health and Safety Professionals in the renewable energy sector, classified as grey-collar professionals, face unique challenges due to the complexity of large-scale RE systems and harsh operating environments. This job role, requiring specialized expertise, particularly in areas like refrigerant leak detection in heat pumps and overseeing permits and safety in wind projects, needs enhanced attractiveness. Efforts to retrain professionals, such as chimney sweepers transitioning to heat pump experts, illustrate the evolving nature of health and safety roles within the renewable energy industry.

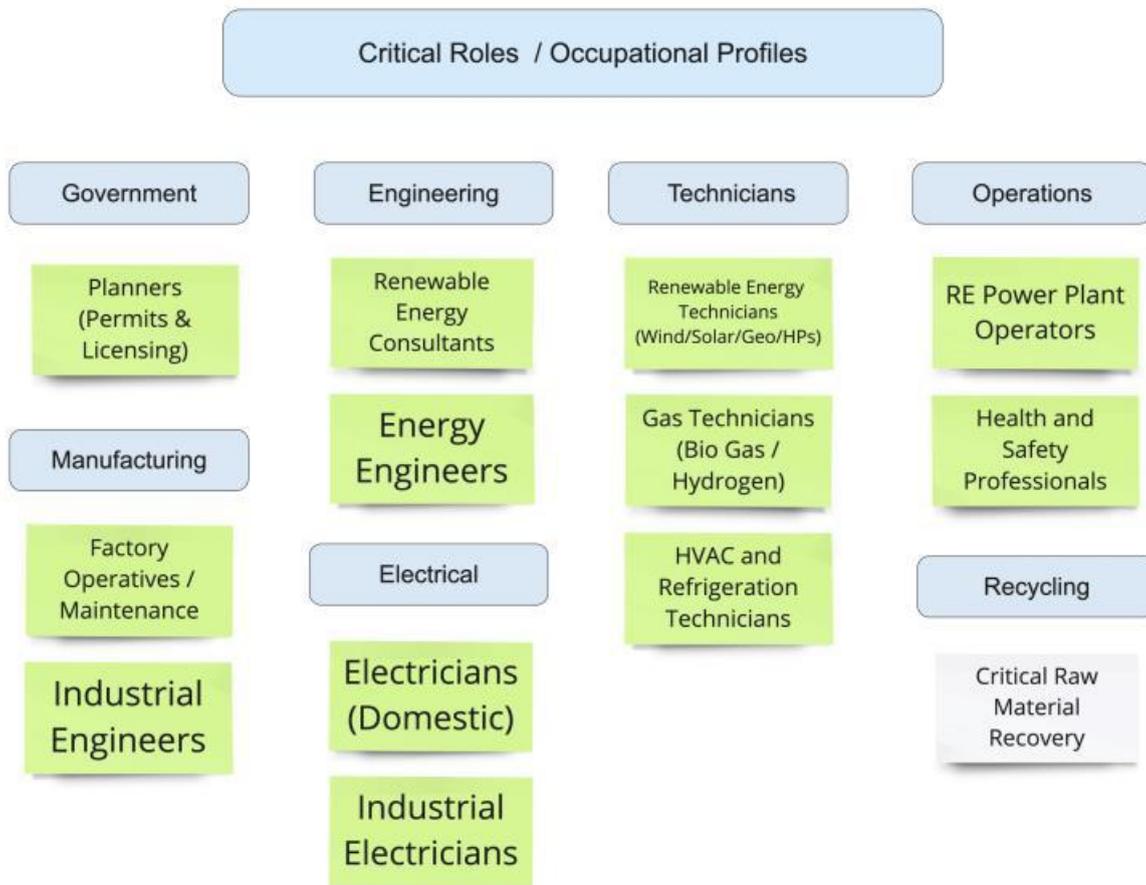
Disposal & Recycling

13. Critical Raw Material recovery

The Critical Raw Material Recovery Specialist is a professional focused on the sustainable

extraction, recycling, and recovery of essential raw materials used in various industries, including renewable energy. This role involves identifying and implementing innovative methods to reclaim materials like rare earth elements critical for technologies such as wind turbines and solar panels. The specialist works to minimize environmental impact, ensure supply chain resilience, and support the transition to a circular economy. Their work is crucial for reducing dependency on virgin materials and enhancing the sustainability of technological advancements.

Based on this analysis we have determined a reduced number of high demand occupational profiles that we will focus on during the project, as presented in the figure below.



As an example, the follow Training/ Role- Profile (target audience) table could be created to show the relevance of Urgent Course proposed:

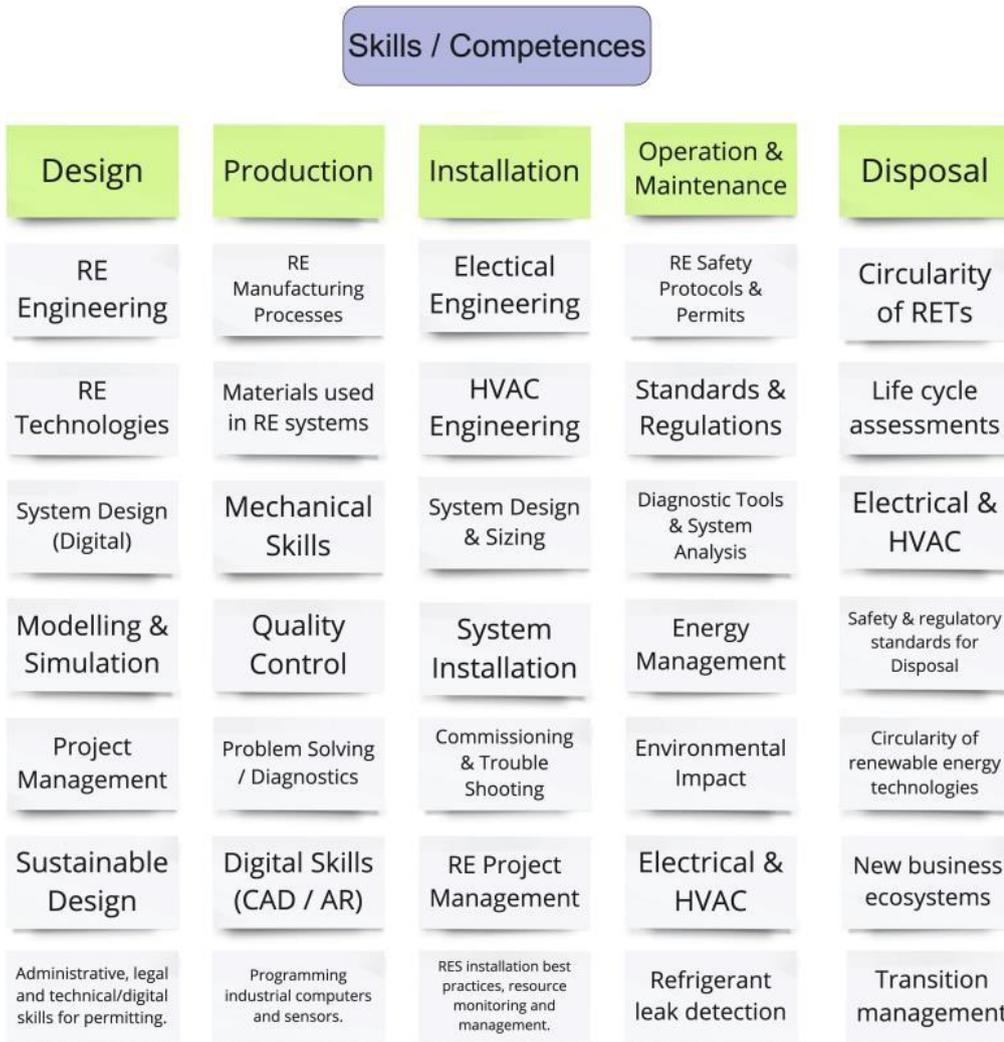
KNX Building/ Home Automation Management Training Critical Roles / Occupational Profiles	ELEC- 3-32- 001- Cours de Base	ELEC- 4- 32- 002- Cours Avancé	ELEC- 4- 32- 003- HVAC
Government:			
1.Planners – white collar professionals			
Engineering:			
2.Renewable Energy Consultants - white collar professionals			
3. Energy Engineers – white collar professionals	X	X	X
Manufacturing			
4. Factory Operatives / Maintenance – blue collar professionals			
5. Industrial Engineers - white collar professionals			
Electrical			
6. Electricians (Domestic) – grey collar professionals	X	X	X
7. Industrial Electricians – grey collar professionals	X	X	X
Technicians			
8. Renewable Energy Technicians (wind / solar / geothermal / heat pumps) – blue collar professionals	X	X	X
9. Gas technicians (biogas / hydrogen)			
10. HVAC and refrigeration technicians			
Operations:			
11. RE Power Plant operators – grey collar professionals	X	X	X
12. Health and Safety Professionals – grey collar professionals	X	X	X
Disposal & Recycling			
13. Critical Raw Material recovery			

Table 18: Example of the job role - course table

Annex 2: Skills Needs relevance for the job market

REMARK evaluation against the Skills Needs as defined in the project description

The skills strategy and training programme will address 5 core areas of skills structured along the Renewable Energy value chain: Design, Production, Installation, Operation & Maintenance and Disposal. Figure below presents an indicative list of skills that will be addressed by the programme as defined with the members of the Large-scale Partnership on Renewable Energy Skills, subject to revision as part of the formal Needs Analysis in WP2.



As an example, the follow Training/ Job Role (target audience) table could be created to show the relevance of Urgent Course proposed:

KNX Building/ Home Automation Management Training Skills / Competences	ELEC- 3-32- 001- Cours de Base	ELEC- 4-32- 002- Cours Avancé	ELEC- 4-32- 003- HVAC
Design			
RE Engineering			

RE Technologies			
System Design (Digital)			
Modelling and Simulation			
Project Management			
Sustainable Design			
Administration, legal skills for permitting			
Production			
RE Manufacturing processes			
Materials used in RE Systems			
Mechanical skills			
Quality control			
Problem solving/ Diagnostics			
Digital skills (CAD/ AR)			
Programming industrial computers and sensors			
Installation			
Electrical Engineering	X	X	X
HVAC Engineering	X	X	X
System Design and Sizing			
System Installation	X	X	X
Commissioning and trouble shooting	X	X	X
RE Project Management			
RE installation best practices, resource monitoring and management		X	X
Operations and Maintenance			
RE Safety Protocols and permits			
Standards and regulations			
Diagnostic tools & system analysis	X	X	X
Energy management		X	X
Environmental impact			X
Electrical and HVAC	X	X	X
Refrigerant leak detection			
Disposal			
Circularity of RETs			
Life Cycle Assessments			
Electrical and HVAC	X	X	X
Safety and regulatory standards for disposal			
Circularity of renewable energy technologies			
New business ecosystems			
Transition Management			

Table 19: Example of the skills needs - course table

Annex 3. Detailed course description of the courses offered by CDC

Detailed course description of the selected courses:

	KNX / EIB – Cours de base (40 hours, 8 places) https://metiers.cdc-gtb.lu/training/fr/co/ELEC-3-32-001.html
	Practical Information
Method	Face-to-face training in a training centre
Infrastructure	Labo, classroom
Duration	40 hours
Language(s) of training	FR / DE
Number of places	8 places offered
Sessions(s)	Register online
Target Audience	<ul style="list-style-type: none"> • electricians, HVAC installators, integrators • Minimum level required: EQC 3
Conditions of participations	Free of charge for companies contributing to FONGECO. Rate on request for other companies.
Administrative Contact	formations@cdc-gtb.lu or in the project context oliver.deckers@cdc-gtb.lu
Links	<ul style="list-style-type: none"> • Module sheet • Registration form
Remarks	This module can be ordered on its own or as part of a training course: Certified craftsman
	Educational Information
Module Objectives	<ul style="list-style-type: none"> • Understand KNX technologies, including bus, switches, captors as well as KNX topology. • Install, configure and make operational the KNX composites like captors, switches and command elements. • Identify and correct simple errors which can happen during the installation of KNX systems, learn how to easily diagnose wiring problems and wrong configuration.
Educational content	The European KNX system allows the installation of domotics through the bus method. This technology is applied in heating/air-conditioning programming as well as alarm systems, lighting management and distant control of electric appliances at home <ul style="list-style-type: none"> • ETS6 Professional • System overview • Topology • Bus peripheric appliances • KNX RF • TP installation
Teaching methods	<ul style="list-style-type: none"> • Theoretical courses (classroom lectures or workshops) • Tutorials (exercises or simulations in class) • Practical exercises • Exam

	Certification
Certification	Validation document: Certificate of participation
	KNX / EIB – Cours avancé (40 hours, 8 places) https://metiers.cdc-gtb.lu/training/fr/co/ELEC-4-32-002.html
	Practical Information
Method	Face-to-face training in a training centre
Infrastructure	Labo, classroom
Duration	40 hours
Language(s) of training	FR / DE
Number of places	8 places offered
Sessions(s)	Register online
Target Audience	<ul style="list-style-type: none"> • electricians, HVAC installators, integrators • Minimum level required: EQC 3
Conditions of participations	Free of charge for companies contributing to FONGECO. Rate on request for other companies.
Administrative Contact	formations@cdc-gtb.lu or in the project context oliver.deckers@cdc-gtb.lu
Links	<ul style="list-style-type: none"> • Module sheet • Registration form
Remarks	This module can be ordered on its own or as part of a training course: Certified craftsman
	Educational Information
Module Objectives	<ul style="list-style-type: none"> • Master advanced KNX programming commands like logic functions, time programming, scene- and event commands. Integration of KNX with other building management and security systems • Application of ETS
Educational content	<p>The advanced course deepens the knowledge of complex KNX systems and offers a practical experience of multimedia, HVAC control and security. Participants will improve their competences in logic link programming, IP communication and maintenance/optimisation of sophisticated KNX solutions</p> <ul style="list-style-type: none"> • Planning of integrated security • ETS Apps • HVAC control through KNX • Security technologies • Energy management through KNX • Flags • interaction • KNX secure • Lights command • KNX telegrams • Logical connections • IP communication
Teaching methods	<ul style="list-style-type: none"> • Theoretical courses (classroom lectures or workshops) • Tutorials (exercises or simulations in class) • Practical exercises

	<ul style="list-style-type: none"> Exam
	Certification
Certification	Validation document: Certificate of participation
	KNX / EIB – HVAC (16 hours, 8 places) https://metiers.cdc-gtb.lu/training/fr/co/ELEC-4-32-003.html
	Practical Information
Method	Face-to-face training in a training centre
Infrastructure	Labo, classroom
Duration	16 hours
Language(s) of training	FR / DE
Number of places	8 places offered
Sessions(s)	Register online
Target Audience	<ul style="list-style-type: none"> electricians, HVAC installators, integrators Minimum level required: EQC 3
Conditions of participations	Free of charge for companies contributing to FONGECO. Rate on request for other companies.
Administrative Contact	formations@cdc-gtb.lu or in the project context oliver.deckers@cdc-gtb.lu
Links	<ul style="list-style-type: none"> Module sheet Registration form
Remarks	This module can be ordered on its own or as part of a training course: Certified craftsman
	Educational Information
Module Objectives	<ul style="list-style-type: none"> Provide participants with the knowledge and practical skills needed to design, configure, and implement KNX-based HVAC control systems. Learners will explore how KNX technology can be used to optimize energy efficiency, improve user comfort, and enable smart automation for heating, ventilation, and air conditioning installations in residential and commercial buildings.
Educational content	<p>The HVAC course deepens the knowledge of complex KNX systems and offers a practical experience of multimedia, HVAC control and security. Participants will improve their competences in logic link programming, IP communication and maintenance/optimisation of sophisticated KNX solutions</p> <ul style="list-style-type: none"> Provide basic knowledge about heating systems. Heat Distribution Systems - Understand the operation and use of heat distribution systems. Heat Generators - Introduction to the principles and types of heat generators. Legal Framework - Understand the legal provisions in the field of heating. Understanding Control and Adaptation - Understanding control mechanisms and how to adapt them for optimal performance. Heating Control - Understanding the basics of regulating and controlling heating systems. Drinking Water Heating - Understanding efficient methods for heating drinking water.

	<ul style="list-style-type: none"> • Energy Efficiency with KNX - Using KNX to improve the energy efficiency of heating systems.
Teaching methods	<ul style="list-style-type: none"> • Theoretical courses (classroom lectures or workshops) • Tutorials (exercises or simulations in class) • Practical exercises • Exam
	Certification
Certification	Validation document: Certificate of participation

Annex 4. Detailed course description of the courses offered by InnoEnergy

A more detailed description of each course is below. Each course provides the learner an opportunity to obtain a certificate of completion that is printable and shareable online. Learners can both prove their skill attainment and be a vocal proponent for the Reskill 4 NetZero programme, attracting more learners to the world of renewable energy career development.

As the programme continues, we will review and add more courses that both meet our strict quality standards and support the development of skills needed to be successful in renewable energy careers.

Basic Concepts of Electrical Systems

This course introduces the fundamental concepts of electrical systems, including circuits, components, and basic electrical theory. This course covers key terms, functions of the parts in a circuit, and how the energy flows through the circuit.

Course Technical Level: Introductory - No background knowledge required; suitable for audiences needing a general understanding of the topic.

By the end of this course, learners will be able to:

- Define key electrical engineering terms, including voltage, current, resistance, power, etc.
- Describe the function of key parts of electrical circuits using standard electrical engineering terminology
- Describe how energy flows through a circuit

This course consists of three lessons. Each lesson has video instruction and self-check questions and will take approximately 20 minutes to complete. This course will likely take the learner 1 hour.

Lesson	Outcomes
Lesson 1: Key Electrical Engineering Terms	<ul style="list-style-type: none"> • Define key terms related to electrical circuits, including voltage, current, resistance, energy, and power
Lesson 2: Key Parts of an Electrical Circuit	<ul style="list-style-type: none"> • Describe the function of key parts of electrical circuits using standard electrical engineering terminology • Explain the roles of voltage, current, resistors, and capacitors in electrical circuits
Lesson 3: Energy Flow in Circuits	<ul style="list-style-type: none"> • Describe how energy flows through a circuit • Explain how various factors, like resistance, impact the flow of energy in a circuit • List tool and techniques for measuring current in a circuit

Digital Battery Passport Systems: An Introduction

Countries worldwide are implementing policies mandating that large batteries are traceable throughout their life cycle. This will ensure accountability, prove responsible sourcing, and support a circular battery economy

to reduce environmental impact. Business leaders wonder how these changes will impact on them and seek guidance in this emerging area.

This course provides a general overview of the background, regulations, benefits, challenges, and likely parameters of large-scale battery passport programmes under development. Examples from existing industries will demonstrate how digital product passport (DPP) systems might impact suppliers and resellers of large batteries.

Course Technical Level: Introductory - No background knowledge required; suitable for audiences needing a general understanding of the topic.

By the end of this course, learners will be able to:

- Describe the battery digital product passport legal frameworks in Europe, the United States, and China.
- Outline the data needs of the digital product passport, including carriers, data, and data storage.
- List the likely impacts of the digital product passport on the battery value chain, transportation, and consumer applications.
- Appreciate the complexity and fluid nature of the battery digital product passport (DPP) and its near-term developments.

This course consists of six lessons and a final course assessment. Each lesson delivers content in various modalities such as videos, diagrams, graphics and text. At the end of each lesson, learners are encouraged to self-assess their understanding of the lesson by completing a self-check quiz. This course will take the learner approximately 1 hour.

Lesson	Outcomes
<p>Lesson 1: Introduction to the Battery Digital Product Passport</p> <p>This lesson introduces the battery digital product passport (DPP), including its technical framework, data management, and registry functions.</p>	<ul style="list-style-type: none"> • Understand the difference between the DPP system and DPP data. • Identify the essential technical requirements for the DPP system as per the ESPR. • Explain the role of the EU registry in the DPP system and the types of data it requires. •
<p>Lesson 2: Regulations and Legal Context</p> <p>This lesson provides an overview of regulations that govern the implementation of DPPs, such as the European Green Deal and the Ecodesign for Sustainable Products Regulation (ESPR).</p>	<ul style="list-style-type: none"> • Explain the goals of the European Green Deal and the Ecodesign for Sustainable Products Regulation (ESPR). • Understand how the battery digital product passport (DPP) supports these goals. • Identify key dates and milestones in the implementation of the battery DPP within the EU. • Compare the regulatory approaches to battery management in the EU, the United States, and China. •
<p>Lesson 3: The Digital Passport Infrastructure and Data</p> <p>This lesson covers the technical framework, data management, and essential requirements for implementing DPPs.</p>	<ul style="list-style-type: none"> • Understand the difference between the DPP system and DPP data. • Identify the essential technical requirements for the DPP system as per the ESPR. • Explain the role of the EU registry in the DPP system and the types of data it requires. •

<p>Lesson 4: DPP Impacts</p> <p>This lesson explores the impacts of DPP, highlighting the post-sale tracking and tracing of batteries and their return and processing.</p>	<ul style="list-style-type: none"> • Describe post-sale aspects of battery DPP. • Describe the impact of DPP on the environment and consumers. • Describe possible challenges across supply chains.
<p>Lesson 5: Circular Battery System Case Study</p> <p>This lesson explores a case study of an electric car manufacturer using the circular battery system to illustrate the practical applications of DPPs and their benefits.</p>	<ul style="list-style-type: none"> • Explain the challenges and solutions related to overproduction and maintenance of car batteries. • Identify the process and benefits of partnering with a grid stability provider for second-life battery usage. • Reflect on the role of DPPs in enhancing transparency, sustainability, and resource optimisation in a circular battery system. •
<p>Lesson 6: The Future</p> <p>This lesson expands on the role of DPPs beyond the battery industry by highlighting their potential to transform transparency, sustainability, and consumer awareness across various product groups.</p>	<ul style="list-style-type: none"> • Explain how DPP will expand to other product groups and change consumer behaviour. • Describe likely near-future developments in DPP.

Introduction to Battery Safety

This course introduces essential safety aspects of battery manufacturing, testing, storage, handling, and disposal. It covers administrative and engineering controls, risks and hazards, mitigation, and safety compliance across all phases of the battery lifecycle. Participants will learn to recognize appropriate safety measures, use personal protective equipment (PPE) effectively, and identify key regulations to maintain safety standards and compliance. In addition, emphasis is given to the importance of personal responsibility for safety at all levels of the workplace and throughout the battery lifecycle.

Course Technical Level: Introductory - No background knowledge required; suitable for audiences needing a general understanding of the topic.

By the end of this course, learners will be able to:

- Distinguish between administrative and engineering safety controls.
- Recognize the safety risks in producing, handling, transporting, storing, or recycling battery cells or battery packs.
- Determine appropriate safety measures to ensure safety compliance at any stage of battery cell or battery pack manufacturing and disposal.
- Utilize the appropriate PPE to comply with safety protocols when producing, handling, transporting, storing, or recycling battery cells or battery packs.
- Identify relevant safety regulations to ensure compliance.

This course consists of eight lessons. Each lesson has video instruction and self-check questions. This course will likely take the learner about 20 minutes per lesson to complete.

Lesson	Outcomes
Lesson 1: General Safety: Regulation, Roles,	<ul style="list-style-type: none"> • Explain the role of safety regulations

Responsibilities, and Controls	<ul style="list-style-type: none"> • Identify the function of various safety compliance roles • Differentiate between administrative safety controls and engineering safety controls
Lesson 2: Battery Fundamentals	<ul style="list-style-type: none"> • Explain the relationship between voltage, current, resistance, power, and energy • Identify the various parts of a cell and battery • Differentiate between the functions of a protective circuit module (PCM) and a battery management system (BMS) • Identify the features and inherent risks in the most common cell form factors
Lesson 3: Cell Production Process	<ul style="list-style-type: none"> • Explain the common hazards involved in the cell production process and which pieces of equipment they are associated with • Identify the types of PPE needed for common hazards of the cell production process
Lesson 4: Battery Pack Production Process	<ul style="list-style-type: none"> • Identify the main phases of the battery pack production process • Explain how the battery pack production process differs from the cell production process • Explain why a battery pack is more inherently dangerous than a cell • Explain the common hazards involved in the battery pack production process and which pieces of equipment they are associated with • Identify the types of PPE needed for common hazards of the battery pack production process
Lesson 5: Battery and Cell Charging and Testing	<ul style="list-style-type: none"> • Define the terms C-rate, P-rate, capacity, and voltage window and why they are important for safety • Explain the administrative controls that go into a safe testing plan • Explain the engineering controls that go into a safe testing set-up • Identify four types of tests, their inherent risks, and how to mitigate them
Lesson 6: Handling and Storage of Batteries and Cells	<ul style="list-style-type: none"> • Explain inherent risks of handling cells and batteries and how to mitigate them • Explain the inherent risks involved in charging a battery and how to mitigate them • Recognize the signs of a damaged cell or battery and the appropriate actions to be taken • Be able to derive safe storage conditions from a cell datasheet • Distinguish between safe vs. unsafe cell or battery storage conditions and locations
Lesson 7: Safe Shipping and Transportation of Batteries	<ul style="list-style-type: none"> • Explain the significance of UN38.3

	<ul style="list-style-type: none"> • Explain how the International Air Transport Association (IATA) battery guidance classifies batteries • Identify what is needed to safely ship an experimental cell or battery
Lesson 8: Waste Management and Recycling	<ul style="list-style-type: none"> • Describe what type of battery can be thrown in regular household trash • Explain how to safely dispose of lithium-ion or similar batteries • Explain the hazards involved in battery disposal and recycling • Explain the methods of mitigating those risks

End of Life Second Life, and Recycling (English and Spanish versions)

Sustainability is a key factor in the value chain. So, how can we manage the increasing number of batteries, which, after all, have a relatively short lifespan? There are currently two ways to handle batteries at the end of their life: recycling and reuse. Many questions arise regarding both options. Which batteries can be reused and how? Which raw materials can be recycled from worn-out batteries? What is the current state of research and industrial application for reuse and recycling processes? Is it possible to close the battery value chain loop and establish a circular energy economy today?

In this course, you will learn about the state-of-the-art methods for battery reuse and recycling. Specifically, you will be introduced to the two options for handling batteries that reach the end of their life: reuse and recycling. Additionally, you will gain an overview of battery recycling processes.

By the end of this course, learners will be able to:

- Understand the reuse-recycling potential of lithium-ion battery technologies
- Argue why EV batteries should be repurposed for stationary applications taking into account current limitations
- Explain the technical challenges of recycling
- Explain the different technical recycling approaches applied to portable and industrial battery types
- Explain the operating principles of the main unit operations used in hydrometallurgy

This course consists of six lessons and a course assessment. Each lesson has video instruction and self-check questions and will take approximately 20 minutes to complete. This course will likely take the learner 3.5 hours.

Lesson	Outcomes
Lesson 1: Dismantling a Battery Pack In this lesson, you will learn how to dismantle battery packs respecting basic safety rules such as personal protective equipment	<ul style="list-style-type: none"> • Summarize the main steps when dismantling a battery pack • Identify the main security measures required when dismantling a battery pack • Realize the importance of correct battery disposal for recycling • Ideate business ideas based on circular economy that promote battery recycling

<p>Lesson 2: Reuse of Batteries In this lesson, we will discuss two end-of-life scenarios for batteries, looking at the characteristics of lithium-ion battery technologies and their potential for reuse.</p>	<ul style="list-style-type: none"> • Understand the reuse-recycling potential of lithium-ion battery technologies
<p>Lesson 3: EV Batteries for Stationary Energy Storage There's an increasing number of electric vehicle batteries arriving on the market, and a large amount of waste will be associated with this growth. In this lesson, we will discuss scenarios for tackling the problem.</p>	<ul style="list-style-type: none"> • Argue why EV batteries should be repurposed for stationary applications taking into account current limitations
<p>Lesson 4: Battery Recycling – General Overview In this lesson, you will learn some principles of sustainability applied to battery storage systems features and the approach to waste management.</p>	<ul style="list-style-type: none"> • Know the importance of recycling for the sustainable management of resources • Identify the main features of spent batteries • Know operations, processes and technologies used on treatment and materials recovery • Explain the technical challenges of recycling
<p>Lesson 5: Battery Recycling – Physical Processing This lesson will focus on physical separation processes. Your instructors will describe the most used unit operations, as well as the resulting stream materials.</p>	<ul style="list-style-type: none"> • Know the importance of physical separation in the global recycling flowsheet development • Identify the main operations and their sequence in the recycling processes • Know the main material streams recovered from each operation • Explain the different technical recycling approaches applied to portable and industrial battery types
<p>Lesson 6: Battery Recycling – Hydrometallurgical Processing In this lesson, we will explain hydrometallurgical processing, the final step in the process of recycling spent batteries, which allows metal compounds or metals to be obtained for use in the manufacture of new battery electrodes or any other goods.</p>	<ul style="list-style-type: none"> • Know the importance of hydrometallurgical processing as an alternative to other metallurgical processes • Propose a set of unit operations adequate to treat several types of battery flows • Explain the operating principles of the main unit operations used in hydrometallurgy • Propose simplified flowsheets for battery treatment by hydrometallurgy

Annex 5. Detailed course description of the courses offered by OHKW

HEAT PUMPS

Technical Sales & Planning of Heat Pump Systems: <https://ohkw.de/courses/technischer-vertrieb/>

Course Objective:

This course enables participants **without a technical background** to confidently advise customers and plan heat pump systems. It introduces a new role for installer companies: a **technical sales and planning specialist** who bridges the gap between the office and the field and in doing so, continues to increase the efficiency in the number of installations that can be carried out, through a smart division of more specialised tasks.

Target Groups:

- Office staff in HVAC and renewable energy companies
- Career changers with experience in customer support or sales
- Family members working in small trades businesses
- Energy advisors, real estate managers, and building owners
- Early-stage professionals and orientation seekers in the green job market

Key Content Includes:

- ✓ Heat pump fundamentals and climate context
- ✓ Customer qualification and feasibility assessments
- ✓ Heat load calculations and system sizing
- ✓ Hybrid solutions, legal frameworks & funding schemes
- ✓ Sales skills and customer communication techniques

Format & Structure:

- Format: online, modular with micro-certificates
- Optional in-person workshops with manufacturers and field experts
- Duration: 48 hours over 6 weeks **part-time (alongside work)**
- Price: €499

Heat Pump Summer Camp: <https://ohkw.de/courses/heat-pump-summer-camp/>

Course Objective:

This course equips individuals without a technical background to confidently conduct customer consultations (technical sales) and perform calculations related to heat pump planning and dimensioning and the heat load of buildings. In a one week summer-camp format, we'll learn hands-on key aspects of the technology of heat pumps, how to perform feasibility analysis, how to perform heat load analysis, and also consultations on subsidies from different companies in the heat pump space.

The camp should be seen as a technical introduction to this space, in a fun way, but also an insight into which roles are available for people at the start of their career in renewable energy. Our goal is to therefore make the learning as practical as possible, and to acquire the most relevant corporate sponsors

for the different subject areas : Manufacturer, GreenTec, classic HVAC company, Heat Load Startup to champion certain modules and also explain what job roles in their companies that the training could prepare them for.

Target Groups:

- Students interested in the green job market (in development - cooperation with Fridays for Future)
- Early-stage professionals and orientation seekers in the green job market

Key Content Includes:

- ✓ Heat pump fundamentals and climate context
- ✓ Customer qualification and feasibility assessments
- ✓ Heat load calculations and system sizing
- ✓ Sales skills and customer communication techniques

Format & Structure:

- Delivery: offline, in-presence workshop with manufacturers and field experts
- Optional online materials and testing
- participation certificate
- Duration: 36 hours - one week offline
- Price: free for participants

Design and Planning of Heat Pump Systems: <https://ohkw.de/courses/planung-von-warmepumpensystemen/>

Course Objective:

This practice-oriented course offers a comprehensive introduction to the planning and application of heat pumps in the renovation of existing buildings. Over two days (16 teaching units), participants are introduced to both fundamental and advanced aspects of heat pump technology and its integration into existing structures. The course is designed for professionals involved in effectively planning heat pump systems for retrofitting projects. This course is part of the BAFA BAW Programme and is available for government subsidies for qualified target groups (see below).

Participants will learn:

- ✓ Understand the fundamentals of heat pump technology and its use in existing buildings
- ✓ Calculate heating loads and design the heat pump accordingly
- ✓ Select the appropriate heat pump for retrofit scenarios
- ✓ Optimize system temperatures and hydraulic configurations
- ✓ Integrate solar energy (thermal, PV) into the system
- ✓ Calculate noise levels and plan for sound reduction
- ✓ Design and implement buffer storage systems
- ✓ Understand domestic hot water systems and hygiene concepts
- ✓ Prepare proposals and commission heat pump systems
- ✓ Use software tools for planning and system calculations

Target Groups:

- Certified installers from HVAC (Heating, Ventilation, and Sanitation) companies

- Professionally trained staff from engineering offices specializing in technical building equipment (TGA)
- Energy consultants, e.g., in-house energy advisors in the skilled trades sector

Format & Structure:

- Delivery: online
- Focus: Upskilling
- Duration: 2 days (16 UE)
- Price: €680
- BAFA BAW subsidies available up to 500 €

<https://ohkw.de/courses/planung-von-warmepumpensystemen/>

Hydraulic Balancing: Legal Requirements, Calculation Methods & Practical Implementation: <https://ohkw.de/courses/berechnung-hydraulischer-abgleich/>

Course Objective:

This hands-on training provides participants with a solid foundation in the legal requirements and calculation methods of hydraulic balancing – a key element in the efficiency of modern heating systems, especially when retrofitting with heat pumps.

Using a sample project, participants will learn how to calculate room-specific heating loads, design heating surfaces, and correctly size and configure heating systems using commonly available software tools. Ideal for technicians, planners, and technical consultants aiming to optimize existing heating systems or integrate heat pumps into existing buildings. This course is part of the BAFA BAW Programme and is available for government subsidies for qualified target groups (see below).

Target Groups:

- Certified installers from HVAC (Heating, Ventilation, and Sanitation) companies
- Professionally trained staff from engineering offices specializing in technical building equipment (TGA)
- Energy consultants, e.g., in-house energy advisors in the skilled trades sector

Key Content Includes:

- ✓ Calculating heating loads and size heating surfaces based on a sample building
- ✓ volume flow and hydraulics in existing systems
- ✓ Selecting and configuring pumps and valves (static/dynamic)
- ✓ Software tools and strategies for hydraulic balancing

Format & Structure:

- Delivery: online
- Focus: Upskilling
- Duration: 1 day (08 UE)
- Price: €380
- BAFA BAW subsidies available up to 250 €

<https://ohkw.de/courses/berechnung-hydraulischer-abgleich/>

Heat Pumps in Building Renovation: <https://ohkw.de/courses/heizungssanierung-mit-warmepumpen-in-ein-und-mehrfamilienhauser/>

Course Objective:

This training equips professionals to competently advise on the use of heat pumps in existing residential and non-

residential buildings. It covers legal frameworks, financial incentives, system design, and practical heat pump concepts tailored to building retrofits. The focus is on real-world applications, suitable heat sources, and system selection. This course is part of the BAFA BAW Programme and is available for government subsidies for qualified target groups (see below).

Target Groups:

- Certified installers from HVAC (Heating, Ventilation, and Sanitation) companies
- Professionally trained staff from engineering offices specializing in technical building equipment (TGA)
- Energy consultants, e.g., in-house energy advisors in the skilled trades sector

Key Content Includes:

- ✓ Legal requirements, funding opportunities, and financing models
- ✓ Technical basics and operating principles of heat pumps
- ✓ Assessment and categorization of existing buildings (single-family, multi-family, commercial)
- ✓ Evaluation of different heat sources (air, brine, wastewater, groundwater)
- ✓ Selection and dimensioning of suitable heat pump systems
- ✓ Effective customer consultation using tools, arguments, and planning aids

Format & Structure:

- Delivery: online
- Focus: Upskilling
- Duration: 2 days (16 UE)
- Price: €680
- BAFA BAW subsidies available up to 500 €

<https://ohkw.de/courses/beratung-warmepumpen/>

Annex 6. Detailed course description of the courses offered by WPE (RENEWACAD)

6.1. COURSE 1: Working at heights for wind technicians;

Course	Working at heights for wind technicians		
Description	The training session allows the participant to carry out rescue operations in wind turbines in a safe way. The module includes PPE handling, maintenance and inspection. This module is a prerequisite for any work on wind turbines.		
Requirements			
Duration	16 hours		
Maximum number of participants	12		
Number of trainers	1 trainer for theory and 2 trainers for the practice		
Certificate validity	2 years		
Necessary equipment	1. Full body harness: a. at least two different products 2. Fall restraint lanyards: a. at least two different adjustable products 3. Fixed length fall arrest lanyards with an energy absorber: a. one flexible Y-type b. one fixed adjustable Y – or I-type c. recommended but not required: one fixed or flexible V-type 4. Helmets 5. Vertical fall arrest system with the following sliders/gliders: a. cable guide, twist type attachment b. cable guide, slot type attachment c. cable guide clamp type attachment d. rail type attachment 6. Self-Retractable Lifeline (SRL) 7. Slings 8. connectors (carabiners) with mandatory automatic closing and locking system 9. Evacuation/rescue devices: a. one emergency descent and one rescue device, or b. different rescue devices 10. Rope clamp for rescue (enabling lifting/safe disconnection of a loaded rope type fall protection lanyard) 11. Vertical aluminium ladders 12. Anchor points		
Development		Time	Digital learning
Theory training Introduction to the training	Safety instructions and emergency procedures Facilities Introduction Scope and main learning objectives Ongoing assessment (participant performance assessment form) Motivation Human factors	15 min	☼
Theory training Legislation	Global legislation National legislation	20 min	☼

Theoretical and practical training Harness	Pre-use inspection Fitting Periodic inspections Documentation Maintenance	30 min	☼
Theoretical and practical training Fall prevention	Fall prevention over fall arrest Pre-use inspection Correct attachment to anchor points Correct attachment to the harness The importance of using work positioning	25 min	☼
Vertical fall arrest systems	Legal requirements Pre-use inspection Correct attachment and detachment Correct use Periodic inspections Correct documentation	25 min	☼
Fall arrest lanyards	Legal requirements Pre-use inspection Correct attachment to the harness Fall factor Fall indicators Twin and single fall arrest lanyards Approved anchor points for attachment The importance of always using fall arrest systems	55 min	☼
Dropped objects	Risks Risk reduction	15 min	☼
Self-retracting lifelines	Fall protection systems during actual work in wind turbines Different allowed maximum angles How to attach correctly to the harness Approved anchor points for SRL fall protection systems Pre-use inspection	10 min	☼
Measures to prevent injury during training	Control measures and warm-up	20 min	☼
Practical exercises	Vertical fall arrest systems Fall prevention Fall arrest lanyards	60 min	
Workshop – risks/ hazards & suspension trauma	Using the BST Working at Height Module Suspension trauma	30 min	
Emergency procedures	Contents of an evacuation kit Preparing equipment for use Safe and correct evacuation Safe behaviour	80 min	
PPE review	The individual parts of the PPE equipment	10 min	☼
Rescue devices and rigging setup	The individual parts of different rescue devices Correct use of rescue devices and slings	20 min	☼
Measures to prevent	Control measures and warm-up	20 min	

injury during training			
Rescue exercises	Rescue situations in wind turbines Safe and correct rescue Correct behaviour on the ladder with PPE	355 min	
Training Review	Training review Feedback session	15 min	

Note: ☞ - Digital Learning

6.2. COURSE 2: Working at heights for PV technicians/heat pumps;

Module	Working at heights for PV technicians/heat pumps;	
Description	This intensive one-day course equips photovoltaic (PV) and heat pump technicians with the critical skills to safely perform elevated work in compliance with global standards. Through a blend of theory and hands-on practice, participants will master fall prevention, equipment inspection, and emergency rescue procedures specific to rooftop PV installations and heat pump maintenance.	
Requirements		
Duration	8 Hours	
Maximum number of participants	12	
Certificate validity	24 months	
Participant Prerequisites	Basic knowledge about mounting PV / Heat Pumps Systems	
Necessary equipment	Participants must be equipped with personal protective equipment The training center provides all necessary work equipment, tools, and instruments required for the course	
Development	Topics	Time
Introduction & Safety Theory	Regulations (National and Local Regulations). Hazards of working at heights (falls, dropped objects, weather). Hierarchy of controls (elimination, PPE, etc.).	60 min
Equipment and Pre-Use Inspections	Harness systems, lanyards, anchor points etc. Inspection protocols (damage, wear, certification tags).	60 min
Practical Training – Fall Prevention	Ladder Safety: Proper setup, climbing techniques, 3-point contact rule. Roof Work: Crawling techniques, edge protection, guardrails. Anchor Points: Installing temporary anchors on mock PV arrays/roofs. Scenario: Simulate a PV panel installation on a sloped roof	180 min
Rescue Procedures & Exam	Practical Exam: Perform a safe harness-based task (e.g., retrieve a "fallen" tool). Theoretical Quiz (30 min): Multiple-choice on safety protocols.	180 min
Total training time	480 min	

6.3 COURSE 3: Manual handling for: wind, PV, heat pumps, energy storage;

Module	Manual handling for: wind, PV, heat pumps, energy storage;	
Description	This module addresses to all the people engaged in activities like: administration, production, management, service and maintenance related to wind turbines, PV systems, Heat Pumps and Battery Storage. Lifting and transport result in considerable pressures on the human body. Participants are trained to recognize and evaluate possible pressure on the musculoskeletal system appearing during work. Participants are introduced to the ergonomic work procedures through practical exercises.	
Requirements		
Duration	4 Hours	
Max. No. Of participants	12	
Certificate validity	Unlimited	
Required equipment	Different boxes, appliances and components from 3 kg to 50 kg used in renewable energy systems as WTG parts, PV systems components , Storage Battery and/or Heat Pumps components, transport handles, beams, machineries on wheels, folding ladder, stairs, Imitation of roof structure etc. PPE	
Agenda		Time
Introduction	Course overview Importance of manual handling in the renewable energy sector Safety regulations & responsibilities	20 min
Manual Handling Basics	Risk assessment & hazard identification Safe lifting, carrying & moving techniques Ergonomics & posture Injury prevention strategies Use of mechanical aids, proper posture PPE requirements for safety	60 min
Manual Handling in Wind Energy	Challenges: wind conditions, heavy components, outdoor work Techniques: use of cranes/hoists, team lifting, proper posture Importance of teamwork & coordination	40 min
Manual Handling for PV (Photovoltaic) Systems	Safe handling of solar panels Weather risks & lifting aids (dollies, lifting tools) Teamwork in panel installations	40 min
Manual Handling in Heat Pump Installations	Heavy/bulky components, tight spaces Team lifting & lifting aids (dollies/trolleys) Proper lifting posture	20 min
Manual Handling in Energy Storage	Handling heavy battery components & chemical hazards	20 min
Examination & Practical Evaluation	Theory test Hands-on assessment of lifting techniques	40 min
Total Training time		240 min

6.4. COURSE 4: Basic electrical and mechanical training for wind, PV, heat pumps, energy storage.

Module	Basic Electrical and Mechanical Training for Wind, PV, Heat Pumps, and Energy Storage
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Description	This three-day course provides a simple introduction to electricity and mechanics for wind turbines, solar panels, heat pumps, and batteries. Participants will learn how these systems work, how to install and maintain them, and basic troubleshooting. The course includes safety guidelines and hands-on practice to build confidence in working with renewable energy systems. No prior experience is required.	
Requirements		
Duration	3 Days; 8 Hour/Day	
Max. No. Of participants	12	
Certificate validity	Unlimited	
Required equipment	The training center requires basic electrical tools (multimeters, wiring kits, circuit breakers), solar PV and wind turbine demo kits, a heat pump system, battery storage modules, safety equipment (PPE, fire extinguisher, LOTO kit), and classroom essentials (whiteboard, projector, and printed materials) to provide hands-on learning in renewable energy technologies	
Agenda		Time
Fundamentals of Electrical & Mechanical Systems	Basic electrical concepts: Voltage, current, resistance, power Mechanical principles: Forces, torque, and rotational motion Safety protocols and PPE requirements	Day 1
Wind Energy Basics	Wind turbine components: Generator, gearbox, rotor, and tower Electrical generation in wind turbines Mechanical stress and maintenance basics	Day 1
Solar PV (Photovoltaic) Basics	Solar panel structure and working principles Inverters, charge controllers, and grid connections Electrical wiring and mechanical mounting considerations	Day 1
Hands-on Practical: Wiring and Connections	Basic electrical wiring exercises Reading electrical schematics and diagrams Troubleshooting simple electrical circuits	Day 1
Heat Pumps & Energy Storage	Types of heat pumps (air-source, ground-source) Electrical and mechanical components Installation and maintenance essentials	Day 2
Energy Storage Systems (ESS)	Battery types (lead-acid, lithium-ion) Energy conversion and storage efficiency Electrical safety and battery management systems	Day 2
Mechanical Installation & Maintenance Practices	Bearings, lubrication, and mechanical wear Tools and techniques for installation Common faults and troubleshooting	Day 2
Hands-on Practical: Heat Pump & Battery Installation	Connecting a heat pump to an electrical circuit Battery wiring and maintenance safety	Day 2
Troubleshooting & Practical Training	Recap of key concepts from Days 1 & 2 Safety reminders and best practices Q&A session for clarification	Day 3

Common Issues & Basic Troubleshooting	Identifying electrical faults (wiring issues, loose connections, fuse problems) Recognizing mechanical failures (loose components, wear and tear) Hands-on practice with real-life troubleshooting scenarios	Day 3
Hands-on Practical: System Check & Maintenance	Performing routine maintenance on wind, PV, heat pumps, and batteries Using basic tools: Multimeters, thermal cameras, and torque wrenches Checking electrical continuity and system performance	Day 3
Final Assessment & Certification	Practical skill test: Basic wiring, mechanical checks, and troubleshooting Recap and final Q&A session Certification of completion	Day 3
Total Training time (Break time included)		3 Days

6.5. Commercial & Technical Aspects of Storage Solutions (Monsson Energy Nordics)

Duration: 8 hours

Description

Renewable energy is rapidly transforming the energy industry, creating a more diverse sector with enormous opportunities for new technologies, new businesses, and new ideas. Investments in renewable energy are skyrocketing in line with ambitious national goals aimed at reducing carbon emissions. As renewable energy capacity grows, one viable solution to achieve energy sustainability goals is energy storage. This course is designed to provide an overview of battery energy storage systems, enabling participants to assess the advantages and challenges of this technology and become familiar with its key concepts.

Cost

Free

Target audience

The course is aimed at individuals who wish to gain a deeper understanding of the battery storage industry from both technical and business perspectives. Participants will learn about the concept of electricity production from renewable sources and the main characteristics of this industry. They will be able to assess macro-level opportunities in this sector as well as trends in technologies and new methods of integrating renewables into current energy systems. Additionally, upon completion of the course, they will be familiarized with the main stages involved in developing a project for the production and storage of electricity from renewable sources.

Certificate Offered

Yes – Certificate of Completion

Application Deadline

None, ongoing

Format

In-person

