



Funded by the
European Union



(Project Number: 101061677)

DELIVERABLE D4.4

Additional VET cases

Lead Beneficiary: ENEN

Due date: 30/11/2025

Released on: 27/02/2026

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Dissemination Level		
PU	Public	X
RE	Restricted	
SEN	Sensitive	

Version control table

Version number	Date of issue	Author(s)	Brief description of changes made
1	27.02.2026	Gabriel Pavel	-
2	18.03.2026	Štefan Čerba	Review and update of data
3	15.04.2026	Štefan Čerba	Update of references

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EXECUTIVE SUMMARY

This deliverable presents the rationale and selection process for two priority Vocational Education and Training (VET) courses to be supported under Task 4.3 of the ENEN2plus project. The selection is based on the findings presented in the deliverable D4.1, which assessed more than 1,300 nuclear VET courses across EU Member States and evaluated their alignment with workforce needs identified in WP1, as well as two new particular activities carried out within T4.3:

- The quantitative analysis of the VET offer.
- The job code analysis.

The analysis performed in D4.1 [1] confirmed that while several nuclear domains (e.g., radiation protection, nuclear materials, and medical applications) are well covered both quantitatively and qualitatively, significant gaps persist in critical areas. These include nuclear decommissioning, waste management, nuclear project management, safeguards, and security. Additional key challenges identified include fragmentation of training offers, uneven geographical distribution, limited visibility and cross-border accessibility, insufficient harmonization, and misalignment between training supply and labour market demand. In addition, ageing workforce profiles and the evolving technological and regulatory landscape further increase competence shortages in priority domains.

The activities of task T4.3 revealed that the use of European taxonomy is key to better understanding the differences between the actual offer and demand. After introducing ESCO job occupations into the collected data, the job code analysis indicated similar trends for Professionals and Technicians and associate professionals, whose overall shares are comparable on both the demand and supply sides. On the other hand, Managers, who represent almost 20% of the job demand, are covered by less than 1% of the VET cases. This is further supported by the fact that, out of the 64 total VET cases dedicated to Managers, only 11 meet the required EQF level, representing just 17% of the cases. This highlights the need to design and implement new VET courses targeting this group.

The quantitative analysis of the VET offers performed within T4.3 also highlighted that although 1,369 VET cases from 15 EU countries are available, a gap in the overall EU-wide coverage still persists and the visibility of the offers remains limited. Currently, 54% of the VET cases collected can be graded A+ or A, meaning that these courses are well presented for the target audience. The remaining cases, however, lack some of the information necessary for users, particularly information about frequency, recognition, and delivery method.

Based on these findings, two VET courses were selected as strategic implementation cases to implement an EU level solution for identified problematic topics:

1. **The ELINDER Summer School on Nuclear Decommissioning & Waste Management**, organised by the European Commission together with relevant contributors and hosted by the EC Joint Research Centre (JRC).
2. **Management of Nuclear Power Plant Constructions – an Introduction.**

Together, these courses address complementary phases of the nuclear lifecycle:

- **Back-end activities**, including decommissioning and radioactive waste management;

- **Front-end and new-build activities**, focusing on nuclear construction and project management, including emerging Small Modular Reactor (SMR) contexts.

The ELINDER Summer School responds directly to the growing need for specialized competences in decommissioning planning, cost estimation, waste characterization, regulatory compliance, and knowledge preservation. With an increasing number of facilities entering decommissioning phases across Europe, the course strengthens workforce readiness by integrating technical, safety, regulatory, and managerial topics within a structured European framework.

The course “Management of Nuclear Power Plant Constructions – an Introduction” addresses emerging competence gaps related to new nuclear build projects. As several Member States consider or implement new construction programmes, significant shortages exist in nuclear-specific project management, interface management, risk control, and governance under strict safety constraints. This course integrates multiple domains such as engineering and managerial competences, supports the development of qualified project leaders, and enhances harmonized understanding of nuclear construction practices across Europe.

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0 ACRONYMS

EC	European Commission
EHRO-N	European Human Resources Observatory for the Nuclear Sector
ENEN	European Nuclear Education Network
ESCO	European Skills, Competence, Qualifications and Occupations
EQF	European Quality Framework
E&T	Education and training
EU	European Union
JRC	Joint Research Center
MS	Microsoft
SMR	Small Modular Reactor(s)
UK	United Kingdom
VET	Vocational education and training
WP	Work package

1 INTRODUCTION

This deliverable presents the rationale, methodology, and selection process for identifying two priority Vocational Education and Training (VET) courses to be supported and implemented within the framework of the ENEN2plus project. The selection is based on the comprehensive gap analysis carried out under Task 4.1 and presented in the Deliverable 4.1, which systematically assessed the current situation of nuclear VET provision across the European Union.

The Deliverable 4.1 [1] provided under the Task 4.1 was developed upon the results of previous education and training (E&T) initiatives (including the CINCH series projects) and provided a comprehensive and in-depth evaluation of existing VET offers for the nuclear workforce. The analysis was structured based on specific nuclear thematics and presented a collection and categorization of approximately 1,000 VET courses across EU Member States. In the respective task it was analyzed to which extent the current training opportunities address the professional and vocational needs identified in WP1. Particular attention was given to critical job profiles, domains experiencing shortages, fragmentation of training provision, and barriers to establishing a coherent and sustainable Euratom vocational training programme.

For some nuclear topics (such as Nuclear Materials, Medical Applications, Radiation Protection, etc), it was found that the existing VET initiatives are well developed and in line with the needs of the industry both from the quantitative but also from the qualitative perspective. Moving away from those, the analysis revealed significant gaps in competence coverage, inconsistencies in accessibility and visibility of training opportunities, and insufficient alignment between supply and labour market demand for topics like: Nuclear Security, Nuclear Safeguards, Management of Nuclear Projects or Decommissioning. While many high-quality courses exist, they are often fragmented, unevenly distributed geographically, or insufficiently adapted to evolving technological, regulatory, and safety requirements in the nuclear field. Moreover, limited cross-border recognition and lack of coordinated development prevent or delays the creation of a unified European approach to nuclear vocational training.

Based on these findings, the present document defines the purpose and criteria for selecting two VET courses to be supported as additional implementation cases on the project platform (ENEN HUB / VET platform) [2]. These two topics to be supported will be chosen from the pool of analysed programmes that were identified as problematic or insufficient in addressing critical competence needs. The objective is not necessary to improve individual courses, but to demonstrate scalable solutions that contribute to reducing identified skills shortages and strengthening the coherence and sustainability of Euratom-oriented vocational training.

The selected courses are expected to:

- Address clearly identified competence gaps in priority nuclear domains.
- Contribute substantially to resolving workforce shortages in critical job profiles.
- Enhance European-level coherence through harmonisation, improved visibility, and cross-border accessibility.
- Benefit from and reinforce international collaboration mechanisms developed in WP5 (EU) and WP6 (international).

- Serve as examples for structured, sustainable, and transferable VET solutions at EU level.

Implementation may involve adapting or extending existing courses or developing new ones where necessary. Preference will be given to flexible delivery formats, including e-learning and hybrid models combining online and face-to-face components, as well as hands-on training where required by safety and operational considerations.

These selected cases will act as strategic recommendation examples to address relevant gaps in the European nuclear vocational training ecosystem and to support the development of a more coherent and sustainable Euratom VET programme.

2 METHODOLOGY AND THE SELECTION PROCESS

2.1 Definition of target criteria

Deliverable D4.4 of the ENEN2plus project aims to identify and justify two Vocational Education and Training (VET) courses that respond effectively to urgent skills gaps and structural workforce challenges in the European nuclear sector as per the findings in D4.1. The selection of these two courses has been guided by the following criteria:

- Clear response to identified competence gaps in priority nuclear domains.
- Substantial contribution to resolving workforce shortages in critical job profiles.
- Enhancement of European-level coherence via harmonization, visibility, and cross-border accessibility.
- Reinforcement of cross border collaboration mechanisms developed under WP5 (EU dimension) and WP6 (international dimension).
- Demonstration of structured, sustainable, and transferable VET solutions at EU level.

2.2 Continuous update of the VET database

2.2.1 Transition from the original VET database

As per the ENEN2plus project's workplan, the ENEN HUB or VET platform, a platform developed within WP2, in cooperation with Task 4.3, was intended to serve as a central hub for individuals and entities involved in E&T, VET, as well as job and internship opportunities. More information on the development of the HUB itself, are available in D4.3. As the activities of WP4 were implemented in parallel to the HUB development, a local MS excel based VET database was developed in the framework of the former T4.1. Several versions of the database were created Starting from V1.0, which served as an initial source, up to V3.5, which was the final one at the time of submitting D4.1, the deliverable summarising the activities of T4.1. The V3.5 version of the VET database summarized 1.322 VET offers from 16 EU countries and from the United Kingdom, categorized based on 22 criteria. These VET offers and the categories based on which the VET offer is stored, were directly implemented in the VET platform through the nuclear-education.eu domain. All 1322 VET offers collected within T4.1 are available at the VET platform as private courses.

As T4.3 was seen as a successor of some of the T4.1 activities, the collection of VET offer through the MS Excel based VET database was continued after the completion of D4.1. It should be noted that the decision to continue with the MS Excel file was also strongly influenced by the dynamics of the VET platform (at the ENEN HUB). The time scale of the VET platform was not synchronous to T4.3, there were some implementation issues as well as the number of active users at the time of decision was not satisfactory. During the implementation of T4.3 several new versions of the VET database have been created, which helped to refine the content and bring it closer to the VET platform. Compared to the original VET database implemented into the VET platform, the following updates have been made during the implementation of T4.3:

- V3.6.0 – Major update – February 2024 – 1.322 items
- V3.6.1 – Minor update – February 2024 – 1.322 items
- V3.6.2 – Minor update – February 2024 – 1.322 items

- V3.7.0 – Major update – May 2024 – 1.322 items
- V3.7.1 – Minor update – May 2024 – 1.364 items
- V3.7.2 – Minor update – May 2024 – 1.364 items
- V3.8.0 – Major update – March 2025 – 1.369 items
- V3.8.1 – Minor update – March 2025 – 1.369 items
- V3.8.2 – Minor update – April 2025 – 1.369 items
- **V3.8.3** – Final version – March 2026 – 1.369 items

The latest version of the database consists of the following sections:

- Data list – consisting of VET data
- VET summary - consisting of the statistics of the collected VET offer
- Quantitative assessment of the VET offer – labelling of offers and providers
- Job code analysis – implementation of EU taxonomy

2.2.2 Summary of the VET data collection

This section briefly summarises the statistics of the VET data collection. The summary of VET cases per EU country is shown in Figure 1 and selected statistics are presented in Figure 2 - Figure 8.

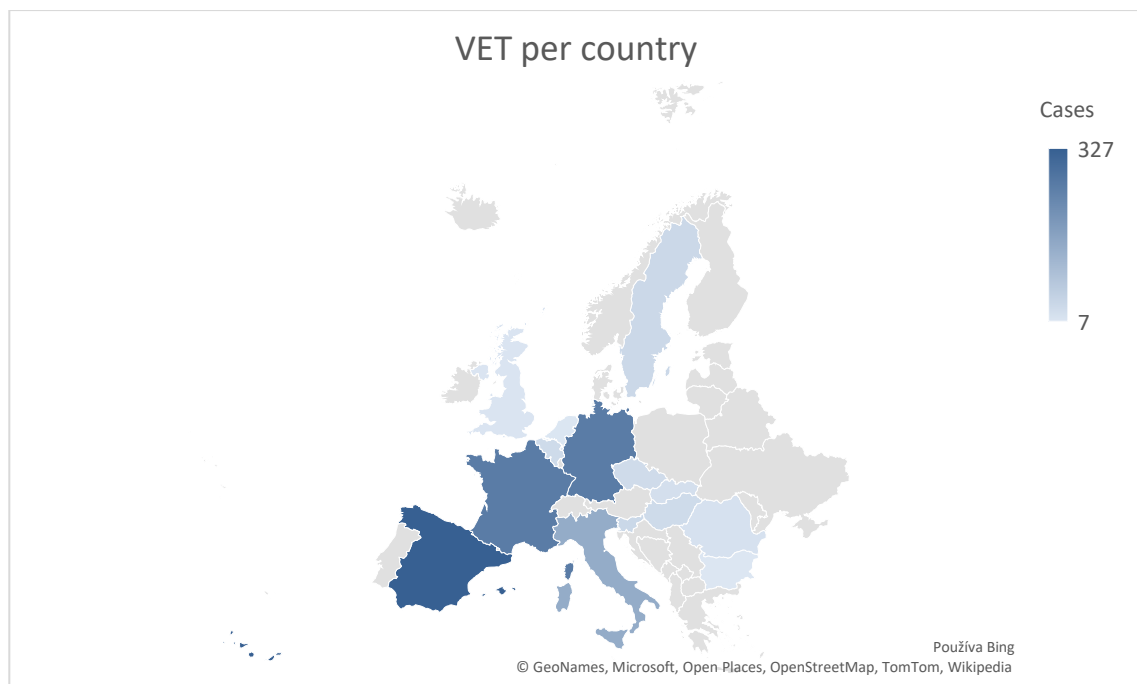


Figure 1: Summary of VET cases per EU country

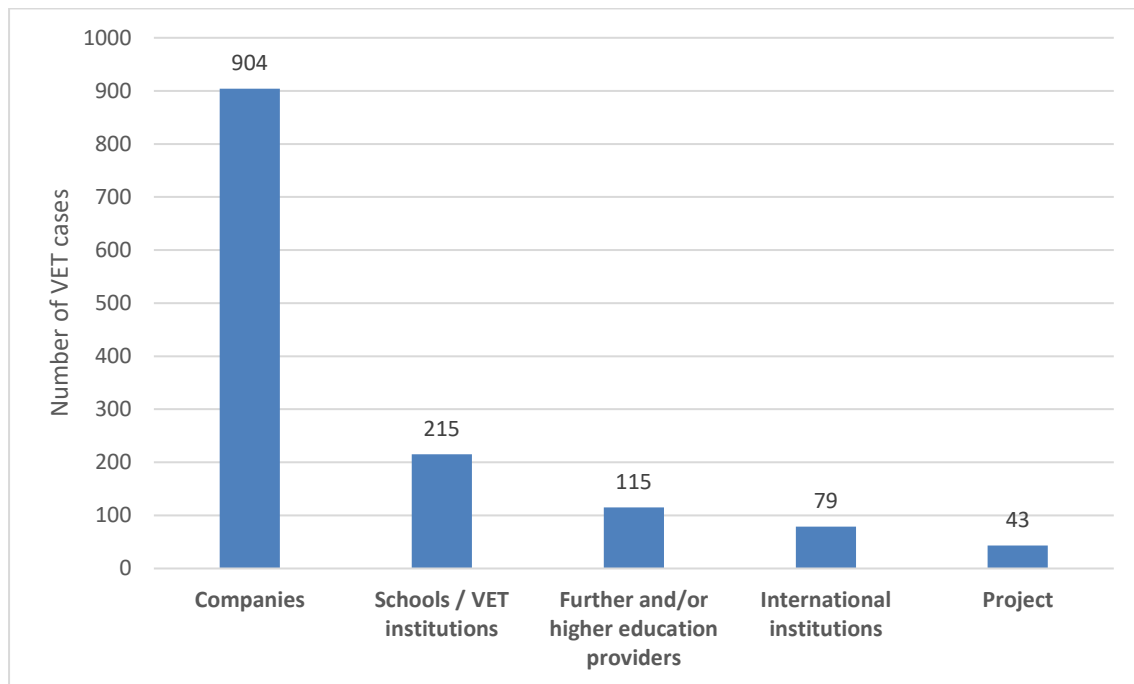


Figure 2: Summary of VET cases per providers

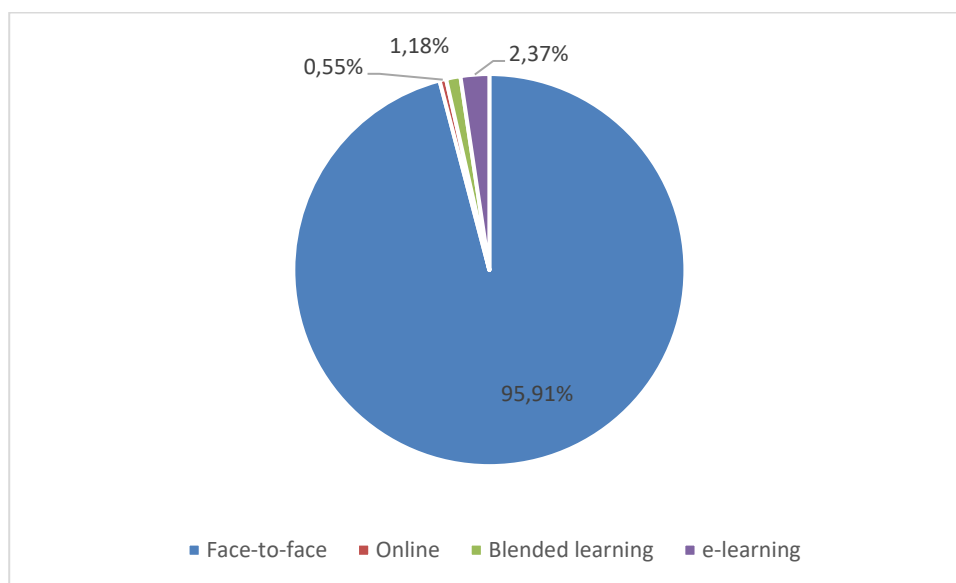


Figure 3: Summary of VET cases per providers

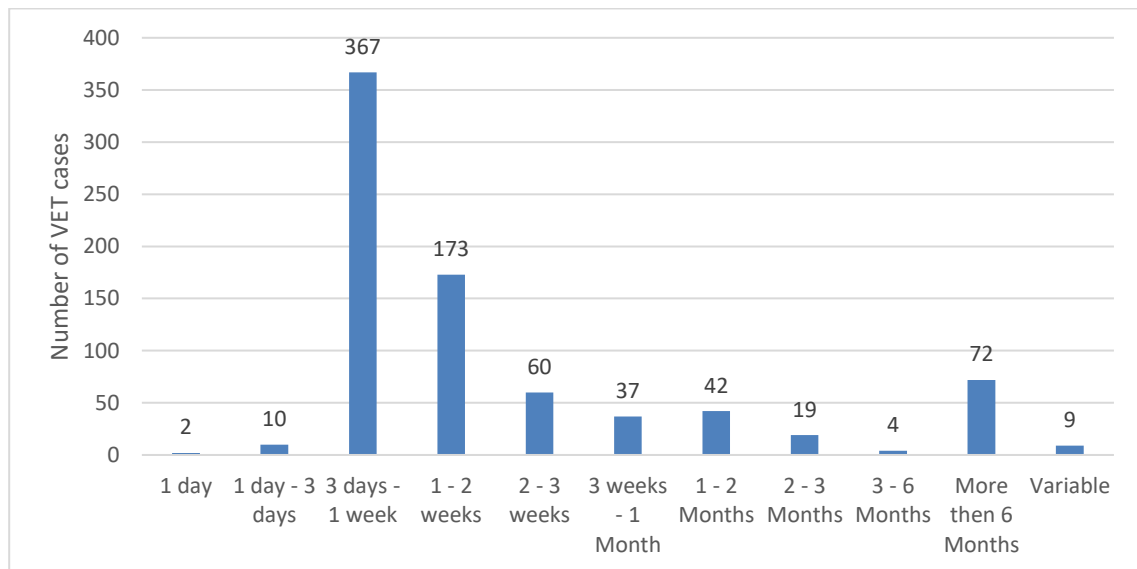


Figure 4: Summary of VET cases based on their time span

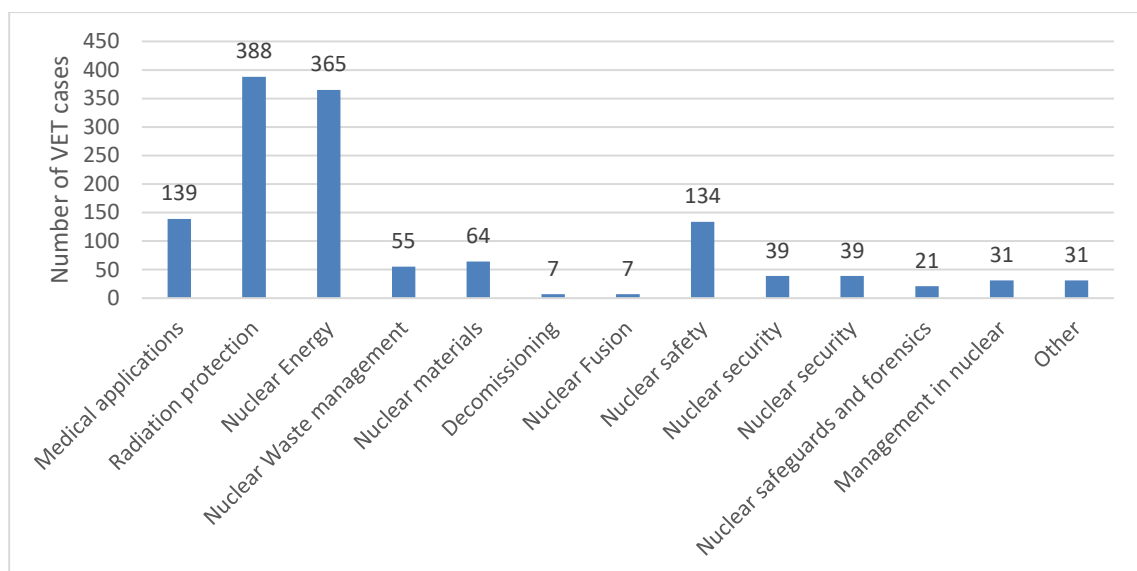


Figure 5: Summary of VET cases based on the nuclear domain

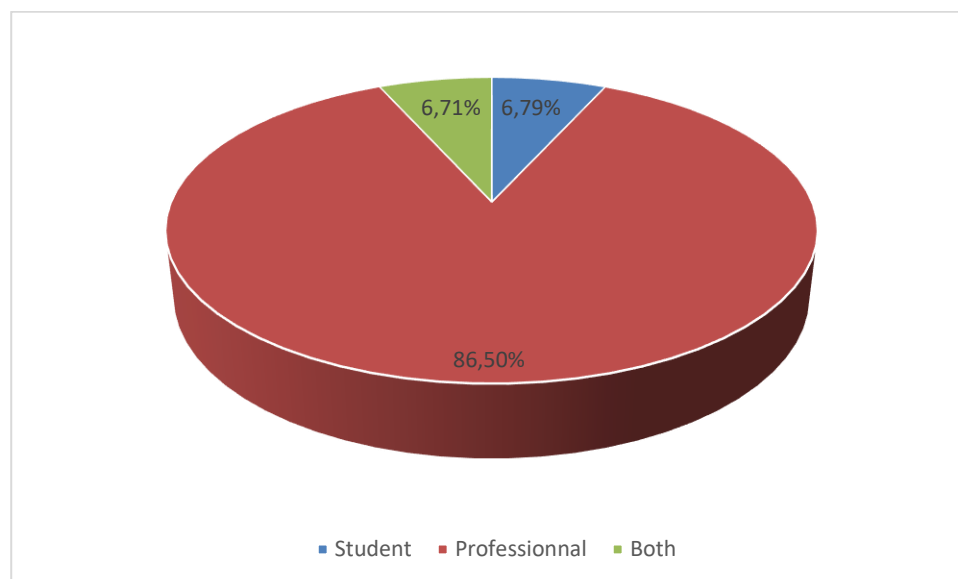


Figure 6: Summary of VET cases based on the target audience

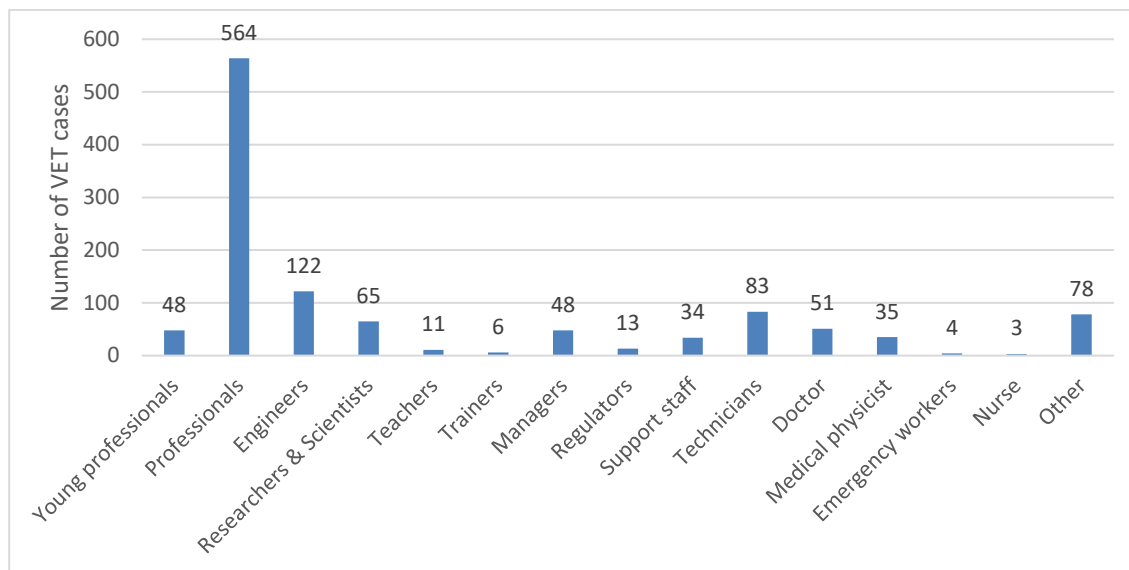


Figure 7: Summary of VET cases based on the target profession

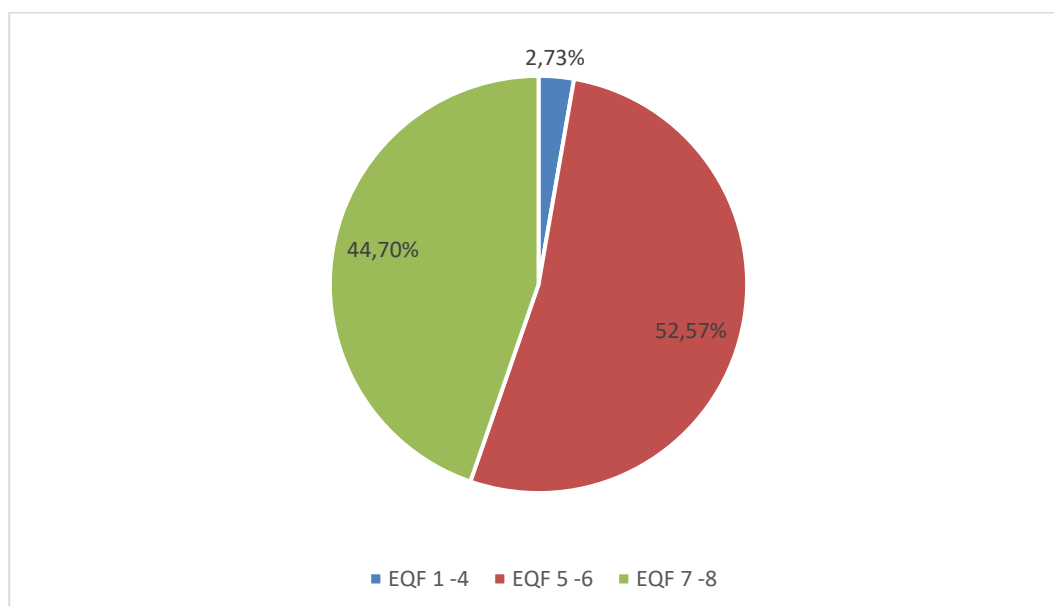


Figure 8: Summary of VET cases based on the EQF level

2.3 Quantitative assessment of the VET offer

2.3.1 Definition of simplified evaluation criteria

Following the qualitative analysis of the VET offer carried out within Task 4.1, a discussion took place regarding the selection of evaluation criteria and their corresponding weights. In the T4.1 qualitative VET analysis, the offer was evaluated based on 13 criteria, for which a total score between 0 and 50 points could be achieved. Then based on the achieved points a grade between A – E was given. As the objectivity of this approach was not accepted by all project partners, the Task 4.3 team decided to repeat the analysis using a quantitative approach. In this approach, the evaluation assessed whether the required information was available or not for the particular VET cases, without applying specific weights to the criteria.

The quantitative analysis was carried out using the updated V3.8.2 version of the VET database, and the following criteria were taken into account:

1. Language
2. Country
3. Frequency
4. Target audience
5. Level of education
6. Focus of learning outcomes
7. Outcome destinations
8. Nuclear domain
9. Qualification after completion
10. Time span
11. Delivery method
12. Learning objectives specified
13. Recognition certificate

Here a Yes = 1 and No = 0 logic was applied. The cumulative numerical values were then used to compute a total score for each VET offer, falling within the 0 to 100% range. Based on these scores, we assigned corresponding grades to the offers:

- 100.0% - **A+**
- 90.0% - 99.9 % - **A**
- 50.0% - 89.9% - **B**
- 0.0% - 49.9% - **C**

2.3.2 Results of the quantitative analysis of the VET offer

The analysis was carried out at the level of individual courses and providers. The results are presented in Table 1. They show that 54.1% of the cases are graded A or A+, indicating that most of the VET cases are sufficiently described and visible to potential users. On the other hand, there is still room to improve the visibility of VET cases and to facilitate the selection of courses by interested individuals. The breakdown of the results by individual evaluation criteria is shown in Figure 9.

Table 1: Result of the quantitative VET analysis

Grade	Courses		Providers	
	Count	Ratio [%]	Count	Ratio [%]
A+	416	45.9	56	30.6
A	300	33.1	46	25.1
B	544	60.0	54	29.5
C	63	6.9	27	14.8

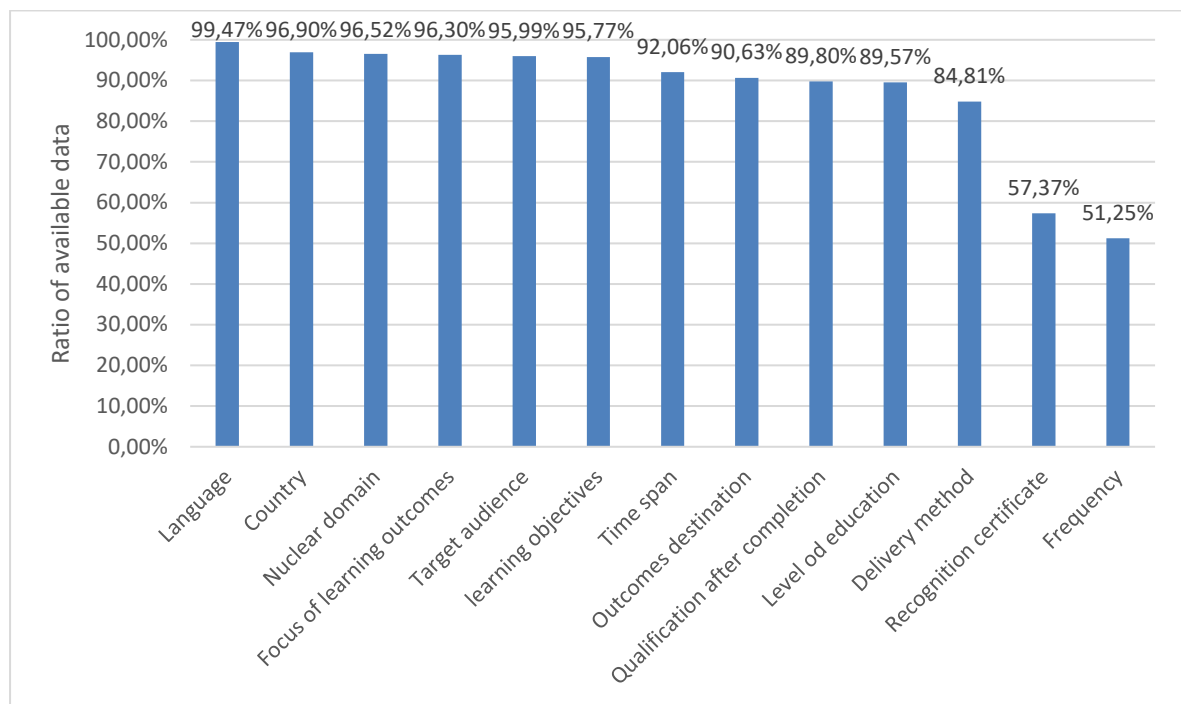


Figure 9: Breakdown of the results of quantitative VET analysis into individual criteria

The results show that most of the VET courses provide sufficient information on the language, country, nuclear domain, focus of learning outcomes, target audience, learning objectives and time span of the curriculum. Information mostly missing from the description of the VET cases are related to the frequency, the recognition of the issued certificates as well as the delivery method.

2.4 Implementation of European job classification taxonomy

2.4.1 Mismatch between the collected data and the EU taxonomy.

The analysis of the survey circulated among project partners during the implementation of WP1, particularly T1.1 and T1.2, identified several issues related to the use of the collected data. The first major issue was the low response rate to the questionnaires, which resulted in an uneven distribution of answers across individual countries and industries, as well as reduced credibility of the responses. Another important issue concerned the form of answers to specific questions related to jobs in the nuclear sector. In most cases, respondents described these jobs in their own words using abstract descriptions rather than using a common European job taxonomy. As a result, the answers could not be directly evaluated or matched with the data collected in the VET database. As stated in D4.1, several assumptions had to be made, mostly based on personal judgement, which further limited the credibility of findings.

2.4.2 Re-evaluation and matching the data.

Within the implementation of T4.3, the project team decided to match the collected data with the EHRO-N job taxonomy [3]. The activity was carried out in cooperation with the JRC where responses from the ENEN2plus WP1 survey were used as source data. First the abstract job descriptions were adopted from the survey and were condensed using the EHRO-N/ESCO classification [4]. Then the EQF level was identified and the final list of occupations, identified by 3-digit ESCO codes, was found.

2.4.3 Summary of nuclear jobs based on the demand.

Based on the methodology listed above the responses from the WP1 survey have been matched with ESCO jobs and occupations. The results are shown in Table 2 and the share of individual job categories is shown in Figure 10.

Table 2: Classification of the jobs from the WP1 survey in terms of the ESCO taxonomy

Job code	Occupation	EQF level	Count
1) Managers		6 - 8	25
112	Managing directors and chief executives	6 - 8	1
121	Business services and administration managers	6 - 8	15
132	Manufacturing, mining, construction, and distribution managers	6 - 8	7
133	Information and communications technology service managers	6 - 8	2
2) Professionals		6 - 8	98
211	Physical and earth science professionals	6 - 8	10
214	Engineering professionals (excluding electrotechnology)	6 - 8	66
215	Electrotechnology engineers	6 - 8	7
226	Other health professionals	6 - 8	11
231	University and higher education teachers	6 - 8	1
242	Administration professionals	6 - 8	2
252	Database and network professionals	6 - 8	1
3) Technicians and associate professionals		4 - 6	8
311	Physical and engineering science technicians	4 - 6	4
312	Mining, manufacturing and construction supervisors	4 - 6	1
313	Process control technicians	4 - 6	3
7) Craft and related trades workers		3 - 4	4
721	Sheet and structural metal workers, moulders and welders, and related workers	3 - 4	1
722	Blacksmiths, toolmakers and related trades workers	3 - 4	1
723	Machinery mechanics and repairers	3 - 4	1
754	Other craft and related workers	3 - 4	1

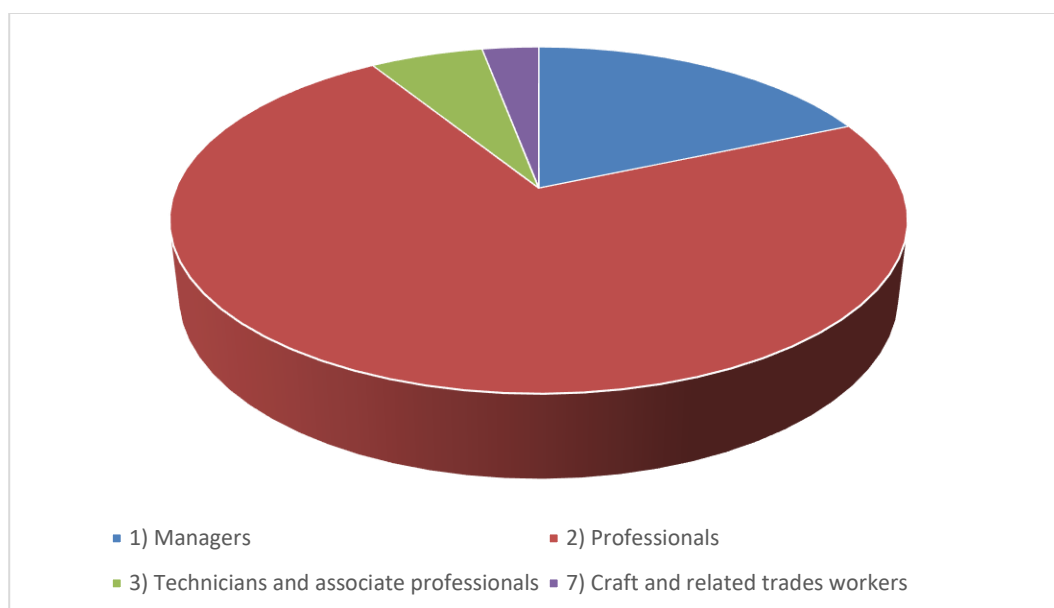


Figure 10: Share of individual job categories resulting from the job code analysis

2.4.4 Summary of nuclear jobs based on the VET offer.

Following the same procedure, the job code analysis was also carried out based on the VET offer. The ESCO taxonomy was applied to the “target audience” category in the VET database. The target audience data were matched with ESCO occupations. The results are shown in Table 3, where the first column represents the original list of occupations in the VET database, the second column shows the corresponding ESCO occupation, and the third column presents the total number of VET cases dedicated to each job category. The number of VET cases represents both the total number of VET cases and those that meet the required EQF level. Figure 11 presents the proportion of qualified VET cases. The comparison of the offer and demand for individual job categories is shown in Figure 12.

Table 3: Classification of the jobs in the VET database in terms of the ESCO taxonomy

<u>Target audience of VET courses</u>	<u>ESCO occupation</u>	<u>VET cases</u>	
		<u>Total</u>	<u>Qualified</u>
Managers	Managing directors and chief executives	64	11
Young professionals	Physical and earth science professionals	48	30
Professionals		612	304
Engineers	Engineering professionals (excluding electrotechnology)	198	198
Researchers and Scientists	Physical and earth science professionals	144	144
Teachers	University and higher education teachers	11	10
Trainers		18	11
Regulators	Administration professionals	36	9
Doctors	Other health professionals	51	50

Medical physicists		35	34
Nurses		3	3
Support staff	Physical and engineering science technicians	38	11
Technicians	Process control technicians	97	84
Emergency workers	Physical and engineering science technicians	4	0

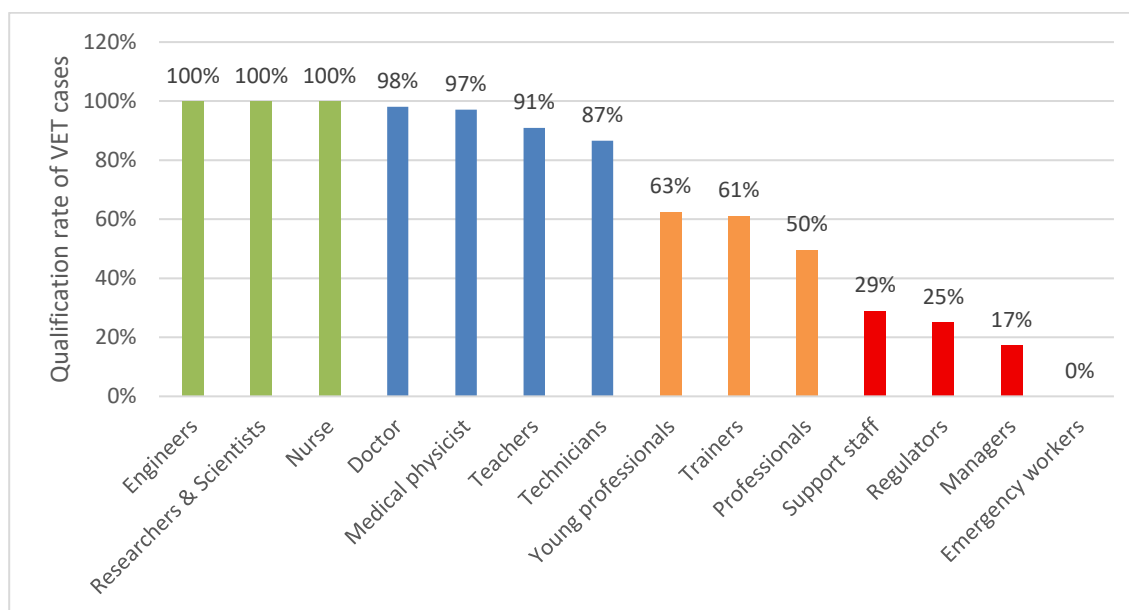


Figure 11: Ratio of VET cases meeting the required EQF level for a particular target audience

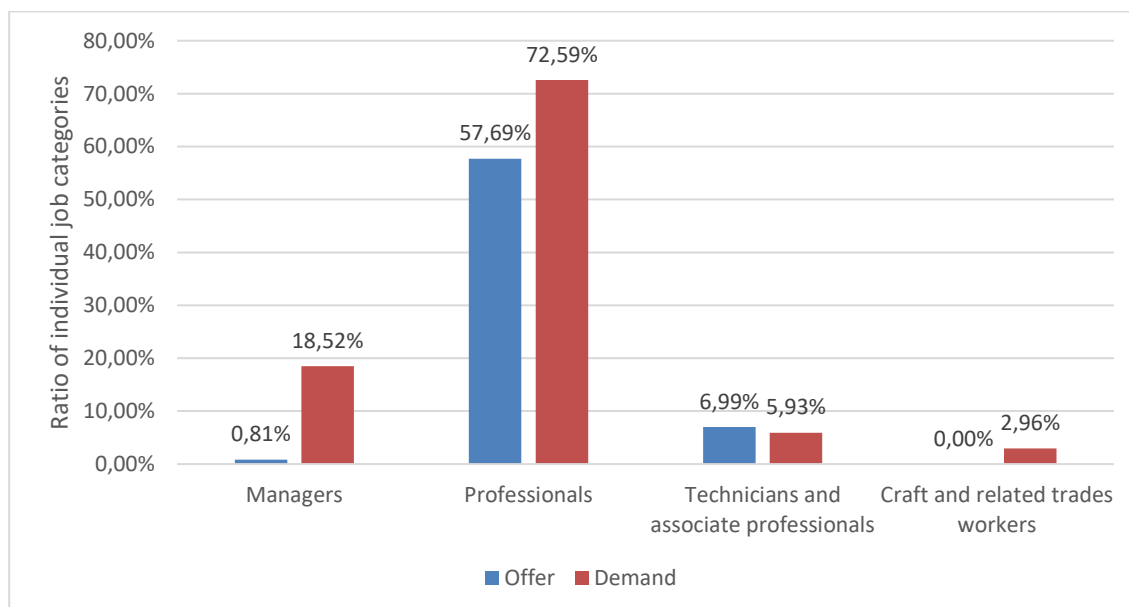


Figure 12: Comparison of the offer and demand for individual job categories

The results are showing clearly similar trends for *Professionals* and *Technician and associate professionals*, where their overall share is similar both on the side of the demand and the offer. On the other hand, *Managers*, who represent almost 20% of the job demand, are covered by less than 1% of the VET cases. This is further supported by the fact that, out of the 64 total VET cases dedicated to *Managers*, only 11 meet the required EQF level, representing just 17% of the cases. This highlights the need to design and implement new VET courses targeting this group.

2.5 Selection of new VET cases for implementation

The selection of new VET cases for implementation was supported by the findings of the job code analysis presented in the previous chapter and by the results of Task 4.1. The areas selected for the development of new VET cases are management in the nuclear field, decommissioning, and waste management. The need to implement new VET cases for managers is clearly indicated by the findings presented in the previous chapter and is also supported by the estimated VET capacity expressed in the number of years required to meet the demand, as presented in Table 10 of Deliverable D4.1. This table identifies management in the nuclear field as a critical area and decommissioning and nuclear waste management as areas that should be further strengthened.

The two selected courses are the following:

1. **The ELINDER Summer School on Nuclear Decommissioning & Waste Management**, organised in cooperation with the European Commission and hosted by the Joint Research Centre (JRC).
2. **Management of Nuclear Power Plant Constructions – an Introduction.**

Together, these courses cover two strategically complementary and high-priority domains:

- **Back-end nuclear lifecycle activities** (decommissioning and waste management).
- **Front-end and new-build project management capacities** (construction of nuclear power plants, including potential SMR deployment contexts).

Their selection reflects a targeted lifecycle approach to nuclear competence development, addressing both traditional challenges and future infrastructure needs.

2.5.1 Course 1: ELINDER Summer School on Nuclear Decommissioning & Waste Management

Addressing Competence Gaps in Priority Domains

Decommissioning and radioactive waste management represent one of the most pressing and resource-intensive challenges for the European nuclear sector. A significant number of nuclear facilities across Europe are entering or already are planned to enter in decommissioning phases (see Belgium, Germany). Simultaneously, Member States are advancing geological disposal programmes and long-term waste strategies.

However, several competence gaps persist:

- Shortage of specialists in decommissioning planning and cost estimation.
- Limited practical understanding of waste characterization, conditioning, and disposal paths.
- Insufficient cross-disciplinary (that includes nuclear domain specificities) integration between engineering, safety assessment, radiation protection, and regulatory compliance.
- Loss of institutional knowledge due to workforce ageing.

The ELINDER Summer School directly addresses these gaps by:

- Providing structured, practice-oriented training on decommissioning strategies and technologies.
- Integrating technical, regulatory, safety, and project management aspects.
- Engaging experts from EU institutions, industry, and research organisations.
- Promoting knowledge management and knowledge preservation approaches.

The course thereby strengthens competences in one of Europe's most critical nuclear domains, ensuring long-term continuity and quality in decommissioning and waste programmes.

Contribution to Resolving Workforce Shortages

Considering the recent closure of Nuclear Power Plants from (but not limited to) Belgium and Germany, the European decommissioning market has the potential to expand rapidly. Member States with ageing fleets require engineers, project managers, waste specialists, radiation protection experts, and regulatory professionals trained specifically in decommissioning contexts.

The ELINDER Summer School:

- Targets early-career professionals and advanced students, facilitating rapid integration into decommissioning projects.
- Enhances competences and employability by providing exposure to real case studies and European best practices.
- Connects participants with EU-level institutions and scientific and professional networks.

By accelerating the transition from academic knowledge to practical decommissioning expertise, the course contributes significantly to reducing workforce shortages in such a critical topic.

Enhancing European Coherence and Cross-Border Accessibility

Organized in cooperation with renowned partners and contributors and delivered through the European Commission Joint Research Centre, the ELINDER Summer School:

- Provides a trans-European platform for knowledge exchange.
- Promotes harmonized understanding of EU regulatory frameworks and safety culture.
- Encourages cross-border participation and mobility (cooperation with ENEN2plus).

- Contributes to visibility of EU decommissioning knowledge management initiatives.

This European-level footprint ensures coherence with broader EU nuclear policy objectives and supports convergence of practices across Member States.

Benefits from reinforcing ENEN2plus WP5 Collaboration Mechanisms

The ELINDER model aligns closely with ENEN2plus WP5 (EU collaboration) objectives:

- It provides an interface between EU institutions and national stakeholders.
- It facilitates participation from multiple EU and non-EU countries engaged in decommissioning programmes.
- It strengthens knowledge-sharing networks beyond national boundaries.

As such, it exemplifies how VET actions can reinforce and benefit from the collaboration mechanisms developed within ENEN2plus.

By using a structured curriculum design, the ELINDER Summer School demonstrates a clear added value at European level

It represents a mature, replicable template for future EU-level VET initiatives in other nuclear domains.

2.5.2 Course 2: Management of Nuclear Power Plant Constructions – an Introduction

Addressing Emerging Competence Gaps in New-Build and SMR Contexts

While decommissioning addresses legacy infrastructure, Europe is also facing a renewed interest in nuclear new-build projects, including large, classical reactors and newly designed Small Modular Reactor (SMR) concepts.

New nuclear construction projects are characterised by:

- High complexity and long timelines.
- Strict regulatory and safety constraints.
- Multinational supply chains.
- Significant financial and contractual risks.

A major competence gap exists in:

- Integrated project management tailored to nuclear environments.
- Interface management between engineering, procurement, and construction (EPC).
- Risk management and cost control under nuclear safety constraints.
- Coordination between utilities, vendors, regulators, and contractors.

The course “Management of Nuclear Power Plant Constructions – an Introduction” directly addresses these needs by:

- Introducing nuclear-specific construction management principles.
- Bridging engineering and managerial competences.
- Focusing on governance, oversight, and stakeholder coordination.

This is particularly relevant in the context of renewed nuclear deployment ambitions across several EU Member States.

Contribution to Resolving Workforce Shortages in Critical Profiles

Recent European projects have highlighted shortages in:

- Nuclear project managers due to aging workforce.
- Construction supervisors with nuclear safety culture awareness.
- Interface and contract management specialists.
- Professionals capable of overseeing large-scale, safety-critical infrastructure projects.

By providing foundational knowledge in nuclear construction management, the course:

- Broadens the pool of qualified candidates able to transition into new-build projects.
- Enhances competence of professionals already active in connected sectors (e.g., civil engineering, energy infrastructure).
- Supports the development of a new generation of nuclear project leaders.

Given the strategic importance of timely and cost-effective project delivery, this contribution is important for Europe's energy security and decarbonisation objectives.

Promoting European Harmonization and Mobility

New nuclear construction increasingly involves cross-border industrial cooperation. Harmonized understanding of:

- Safety culture,
- Quality assurance standards,
- Regulatory expectations, and
- Project governance models,

is essential for successful collaboration.

By offering a concise introduction of nuclear management projects at European level, the course:

- Promotes shared terminology and frameworks.
- Facilitates mobility of professionals across Member States.
- Enhances transparency and visibility of nuclear construction career pathways.

This contributes directly to European-wide coherence and competitiveness.

Integration with ENEN2plus objectives

The course is well suited to:

- Engage industrial stakeholders across the EU (WP4 targets).
- Integrate lessons learned from international nuclear construction projects (WP6 dimension).
- Support collaboration with countries pursuing new nuclear build programmes (WP 5 targets).

Its thematic focus makes it particularly relevant for strategic partnerships.

Steps for a structured and Transferable VET Solution

As an introductory yet specialized course, it:

- Provides a scalable framework adaptable to national contexts.
- Can be expanded into advanced modules or certification tracks.
- Serves as a template for further VET actions in nuclear project management.

It therefore meets the criterion of sustainability and transferability at EU level.

2.6 RATIONAL and Strategic Added Value

The selection of these two courses ensures:

- **Lifecycle coverage:** from construction (front-end) to decommissioning and waste management (back-end).
- **Balance between knowledge management and future challenges.**
- **Integration of technical and managerial competences.**
- **Support to both immediate workforce shortages and long-term strategic needs.**

Together, they form a coherent response to structural competence gaps in the European nuclear ecosystem.

3 CONCLUSION

Task 4.3 as follow up of Task 4.1 has been built upon the findings presented in D4.1 and is closely linked with the development of the ENEN education hub. Some of the activities started with the implementation of Task 4.1, which continued after its completion and provided a source of useful information for the selection of new VET cases.

The first activity influencing the selection process was the VET database, which was partially implemented in the ENEN Education Hub but continued to be maintained in MS Excel format. Therefore, continuous data updates and a transition from the original format were required. As new VET cases were identified, the summary of the VET offer had to be re-evaluated, and the results are presented in this document. Although the database covers 1,369 VET cases from 15 EU countries, representing offers from 904 companies, 215 VET institutions, 115 higher education providers, 79 international organizations, and 43 projects, there are still gaps in the overall EU-wide coverage and in the visibility of these offers. Therefore, the original qualitative VET analysis was re-evaluated using a quantitative approach. The results show that 54% of the cases are graded A+ or A, meaning that these courses are well presented for the target audience. The remaining cases lack some of the information necessary for users, particularly information about frequency, recognition, and delivery method.

To support the selection of new cases for implementation, the T4.1 team had to address the mismatch between the collected data and the EU job taxonomy. Therefore, a dedicated job code analysis was carried out to match the abstract job descriptions collected within WP1 with ESCO occupation codes. The re-evaluation and matching of the data were conducted at the level of job demand. This resulted in one of the most important findings of WP4, namely that significant effort is needed to develop new VET cases in the area of management in the nuclear sector. Based on these findings, two new VET cases were selected for implementation. The ELINDER Summer School on Nuclear Decommissioning & Waste Management and the course “Management of Nuclear Power Plant Constructions – an Introduction” fully satisfy the selection criteria defined for Deliverable D4.4 of the ENEN2plus project.

They:

- Clearly address identified competence gaps in high-priority nuclear domains.
- Contribute directly to mitigating workforce shortages in critical job profiles.
- Enhance European coherence through harmonized, and accessible training formats.
- Reinforce EU and international collaboration mechanisms under WP4, WP5 and WP6.
- Provide structured, sustainable, and transferable VET course models at European level.

Their different areas of focus across the nuclear lifecycle help maintain relevance and support the steady, long-term development of Europe’s nuclear education and training landscape

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