



**GREEN-DIGI
PATHWAYS**

A3 FINAL REPORT

— CONTENT ANALYSIS & DEVELOPMENT



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the European Union**

ABOUT THE DOCUMENT

Project: GREEN-DIGI PATHWAYS — Simple and Sustainable Pathways for Digital Skills in VET

Phase: 1 (Foundations)

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(following the consortium kick-off held in Varna on 13 Nov 2025)

Lead for A3: Asociación GO GREEN (Spain) with COPERNICUS (Germany) and Beehive (Bulgaria)



Beehive
Hotel & Co-Working



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Chapter 1 - Executive Summary

Purpose & scope. A3 established the pedagogical and content foundations for the project's training offer. Partners identified priority **digital** and **sustainability** competences for VET, mapped them to EU reference frameworks (**DigComp 2.2**; **GreenComp**), and designed **three** prototype online modules with clear learning outcomes, multimedia materials, and assessment blueprints. ([JRC Publications Repository](#))

What was produced.

- A consolidated **needs analysis** aligned to EU skills policy and current labour-market signals. ([CEDEFOP](#))
- **Three prototype modules** (English master versions) with storyboards, activities, formative/summative assessments and accessibility notes (Section 4).
- A shared **QA and versioning** protocol and cross-partner review notes to feed pilot testing (Phase 2).
- Workflows for **multilingual rollout** (ES, BG) and **platform integration** on COPENICUS' e-learning environment.

Who benefits. VET learners gain practical digital literacy, sustainability know-how and green entrepreneurship basics; VET staff gain ready-to-use, standards-aligned resources; employers gain access to learners with job-relevant competences for the twin transition.

Chapter 2 - Methods & Governance

2.1 Needs analysis approach (sources, data, synthesis)

Purpose & scope. The needs analysis for A3 identified the most relevant *digital* and *sustainability* competences for VET learners and staff and translated them into three prototype modules. This work sat inside Phase 1 (Months 1–7) and produced the competence framework, learning objectives, and assessment approach that the consortium will carry into testing in Phase 2.

How we gathered evidence.

We combined three complementary evidence streams:

1. **Desk research (EU and national level).** Review of authoritative European frameworks and guidance for VET, sustainability and digital competence; analysis of recent EU-level policy/practice on adapting VET to labour-market needs; and a scan of national VET and green transition documents in Germany, Spain and Bulgaria. This ensured alignment with European priorities on green skills, digital transformation and labour-market relevance stated in the project’s description.
2. **Labour-market signals.** Structured review of publicly available labour-market information and partner-sourced sector briefs (e.g., digital literacy “baseline” expectations for entry-level roles; common sustainability tasks in service and light-industry environments; transversal employability needs). These inputs supported the selection of applicable, job-relevant competences the modules must cover for early career VET learners.
3. **Primary inputs from the field.** Short, structured conversations with VET trainers and learners in each country (via the partners’ networks) to validate “pain points” and expectations for online learning (access, language, inclusiveness). These partner-facilitated exchanges are consistent with the project’s plan to iterate content with educators and learners and later validate through national workshops.

Instruments & data handling

- **Rapid survey** items (5-point scales + open comments) captured perceived gaps in digital basics (devices, files, safety), practical green behaviours at school/work, and entrepreneurial mindset.
- **Mini-interview guides** explored barriers to participation (time, language, prior knowledge) and preferences for media (short videos, step-by-step exercises).
- **GDPR compliance:** Participants were informed of purpose, voluntary participation and anonymisation; only non-sensitive data were collected; storage

on partners' secured workspaces with limited access; aggregated reporting only. All instruments and a summary of anonymised results are archived with the A3 evidence pack (see Version Log & Annexes).

How we synthesised evidence into design decisions

Findings were triangulated into a **Competence Map** with three clusters that directly shaped the modules' learning outcomes and content blocks:

- (i) *Digital foundations for VET tasks;*
- (ii) *Practical green skills and behaviours;*
- (iii) *Entrepreneurial & employability enablers.*

These choices mirror the project's objective to develop 3 complete online modules that integrate basic digital skills, environmental awareness and sustainability-oriented entrepreneurship, and to keep materials accessible and inclusive.

2.2 Roles & workflow

Consortium roles

- **GO GREEN (Spain)** leads **A3 Content Analysis & Development** and sustainability pedagogy; it coordinates the competence map, learning objectives, storyboards and content authoring for the three prototype modules.
- **COPERNICUS (Germany)** provides the **e-learning backbone**, hosts and integrates the modules on its platform, and coordinates Phase-2 **feedback, translation and official launch** of the courses. It also underpins instructional design and platform standards.
- **Beehive (Bulgaria)** injects **entrepreneurship relevance** and Bulgarian localisation; it leads the **Replicability Toolkit** later in the project and coordinates the final meeting.

Translation & localisation

- GO GREEN translates required results into **Spanish**; Beehive translates required results into **Bulgarian**; Copernicus translates required results into **German**—all as part of the structured multilingual rollout strategy ensuring accessibility and uptake across target linguistic communities.
- All educational resources are released as **Open Educational Resources (OERs)** with appropriate Creative Commons attribution, as foreseen in the partner obligations.

Workflow & cadence.

- **Kick-off** (held 13 Nov 2025, Varna): confirmed roles, sprint plan and content standards.
- **Sprint 1 (Framework & LO draft)**: competence map + module outcomes.
- **Sprint 2 (Storyboards)**: Alpha storyboards for all three modules.
- **Sprint 3 (Beta content)**: multimedia drafts, interactive exercises, assessments.
- **Sprint 4 (v1.0 prototypes)**: accessibility, usability and platform checks; hand-over to testing.

This cadence aligns with the plan to produce 2–3 prototype modules by the end of Phase 1 for testing in Phase 2 through local workshops in Spain, Germany and Bulgaria (each with 15 VET learners).

Testing & handover to Phase 2

Each partner organises a **3-day local workshop** with 15 VET learners to validate relevance, clarity and engagement (A5–A7). COPENICUS then coordinates **feedback consolidation, translation and the official launch** on its platform (A8).

2.3 Quality management & documentation (versioning, review cycles)

Quality gates & acceptance criteria

Content moved through four gated milestones—**Outline → Alpha storyboard → Beta content → v1.0 prototype**—with cross-partner review at each gate and final sign-off by the A3 lead. Each gate checks: alignment to learning outcomes; technical compatibility with the COPENICUS platform; clarity and inclusiveness; and assessment coherence.

Peer review & cycles

- **Two-pass review** per gate: (1) pedagogy & clarity led by GO GREEN; (2) technical & accessibility led by COPENICUS; Beehive reviews labour-market and entrepreneurship relevance.
- **Turnaround targets**: reviewers respond within 5 working days; authors apply changes within 5 working days, enabling fortnightly progression through the gates. (Responsiveness mirrors the partners' agreed communications standard.)

Accessibility & inclusion

- Materials are designed for **plain-language** readability (B1–B2), **mobile-first** access, captions/transcripts for media, alt-text for images and keyboard navigability.
- All outputs are released as **OERs** with appropriate attribution, enabling reuse in VET contexts beyond the consortium.

Assessment coherence

- Each module includes short formative checks and a brief summative quiz or task aligned to clearly stated learning objectives—consistent with A3’s emphasis on measurable outcomes and platform integration.

Documentation & version control

- A central archive stores: needs-analysis dossier; competence map; module blueprints; storyboards; media assets; assessment banks; and **Version Log & Change Log** (with author, reviewer, date, decision).
- Meeting minutes and review records are retained to evidence quality assurance and continuous improvement—an approach consistent with the project’s structured management and reporting.

Risk management (selected)

- *Schedule slippage*: mitigated by sprint plans, fortnightly gates and MC monitoring.
- *Pedagogical inconsistency*: mitigated by a shared template and cross-partner peer review at each gate.
- *Translation lag/quality issues*: mitigated by early glossaries and bilingual reviews by GO GREEN (ES), COPERNICUS (DE) and Beehive (BG).
- *Accessibility gaps*: mitigated by platform checks led by COPERNICUS before v1.0 acceptance.

Phase-transition readiness

The A3 handover package comprises v1.0 prototypes (three modules), test plans for workshops, learner/teacher feedback tools, and a short *How-to* for platform navigation—ready for Phase-2 validation and the multilingual launch coordinated by COPERNICUS.

Why this governance works

It reflects the consortium's complementary strengths (GO GREEN—sustainability pedagogy, COPERNICUS—platform & instructional design, Beehive—entrepreneurship & localisation), uses regular online governance and shared tools, and builds in quality gates from outline to prototype. It also anticipates Phase-2 workshops and the A8 translation/launch flow, ensuring a clean line from evidence → design → prototype → validation → release.

Chapter 3 - Needs Analysis (sources, data, synthesis)

This chapter synthesizes the frameworks, evidence and user insights that guided **A3 – Content Analysis and Development**, culminating in **three prototype training modules** to be tested with learners and released in a multilingual e-learning format. The design choices below are also consistent with the project’s plan to validate content in Spain, Germany and Bulgaria and to translate modules into Spanish, German and Bulgarian for inclusive uptake.

3.1 Policy & competence frameworks

Digital competence (DigComp 2.2)

We use the European Commission’s **DigComp 2.2** as the master reference for learning outcomes and assessment. The curriculum scaffolds across its **5 areas / 21 competences**—*Information & data literacy; Communication & collaboration; Digital content creation; Safety; Problem solving*—with updated examples spanning **data literacy, online safety and wellbeing**, and **AI-aware use**. These descriptors are mapped directly to module objectives, activity rubrics and short performance tasks (e.g., search-evaluate-cite, safe account setup, basic content remix with attribution).

Source: JRC Publications Repository (DigComp 2.2).

Sustainability competence (GreenComp)

Sustainability learning outcomes align with **GreenComp’s 4 areas**—*Embodying sustainability values; Embracing complexity; Envisioning sustainable futures; Acting for sustainability*. These inform both the **content** (e.g., resource efficiency, circularity basics) and the **pedagogy** (e.g., problem-based projects, school/enterprise eco-audits, local data walks). Assessment emphasizes reflective judgement, systems awareness and feasible action plans.

Source: JRC Publications Repository (GreenComp).

Implications for design.

- Outcomes are written in learner-friendly language and mapped to **DigComp levels A1→A2** for entry VET.
- Each lesson includes a **GreenComp-anchored “act” task** (e.g., mini waste-stream audit, energy-use diary) and a **DigComp micro-skill** (e.g., file naming/versioning, privacy controls).
- Rubrics check **knowledge/skills/attitudes**, with pass criteria aligned to the two frameworks.

A3 deliverable link: The three prototype modules produced under A3 will be **tested locally** and then **translated** prior to platform launch, per the activity plan.

3.2 Labour market signals relevant to VET

Rising digital intensity of work

Eurostat indicates **>10 million ICT specialists in the EU in 2024 (~5% of total employment)** and a continued upward trend. Beyond ICT roles, **baseline digital skills are increasingly required across non-ICT occupations** (administration, retail, hospitality, care, transport). *Source: European Commission / Eurostat*

Twin transition pressure

CEDEFOP projections show net positive employment impacts from green and digital transitions, **paired with fast-rising digital skill needs in lower-skilled jobs**, underscoring the inclusion imperative for VET pathways. *Source: CEDEFOP*

Skills-mix matters

OECD Skills Outlook 2023 stresses that resilient, just transitions hinge on **blended cognitive–digital–green skillsets** and targeted upskilling for those most at risk of being left behind. *Source: OECD*

Implication for A3.

For **entry-level VET learners**, curricula should couple **practical digital basics** (information/data; communication/collaboration; safety) with **actionable sustainability literacy** and **entrepreneurial problem-solving**, enabling learners to **translate green awareness into workplace practice**.

3.3 Personas & priority needs (from partner scoping workshops)

1. **“Starter”** (16–20, initial VET)
 - Needs: basic productivity, online safety & wellbeing, climate literacy.
 - Design cues: short, hands-on tasks; **mobile-first** content; high visual scaffolding; instant feedback.
2. **“Reskiller”** (25–40, career switch)
 - Needs: recognition of prior learning, **job-task simulations** (eco audit, energy tracking), portfolio artefacts.

- Design cues: scenario-based cases, time-flexible pacing, printable checklists and evidence logs.
3. “Entrepreneurial doer” (any age)
- Needs: simple **business modelling** (value proposition/costs), digital marketing basics, “**green by design**” decisions.
 - Design cues: one-page canvas, cost/benefit calculators, product-impact quick checks.

Operational note: These personas reflect the project’s participatory approach and will be validated during **country workshops (15 learners per site)** before translation and platform release.

3.4 Gap analysis (what we target)

Gap observed	A3 response
Fragmented, non-standard digital basics	Map outcomes to DigComp 2.2 ; scaffold from A1→A2 ; embed micro-tasks and self-checks in every lesson. (<i>JRC – DigComp 2.2</i>)
Sustainability taught as theory	Use GreenComp as the spine; add localized “act” tasks (waste, energy, circularity mini-projects). (<i>JRC – GreenComp</i>)
Limited pathways from “awareness” to “doing”	Integrate micro-projects and a green entrepreneurship strand with simple business tools (canvas, cost/impact).
Accessibility & language barriers	WCAG-aligned design (captions, contrast, keyboard paths); multilingual rollout (EN/ES/DE/BG) with plain-language explainers. (<i>Translations by partners: Spanish—GO GREEN; German – Copernicus; Bulgarian—Beehive.</i>)

How this needs analysis shapes A3 outputs

- **Three prototype modules** will be produced, each **dual-mapped to DigComp & GreenComp**, and built around short tasks, reflection prompts and lightweight assessment rubrics.



- **User validation** will occur through **three local workshops (Spain, Germany, Bulgaria; 15 VET learners each)**, feeding revisions prior to publication on the COPERNICUS platform.
- **Multilingual release** is ensured by partner commitments to translation/adaptation (**GO GREEN—Spanish; COPERNICUS – German; Beehive—Bulgarian**) to widen access and inclusion.

References used in A3 design:

DigComp 2.2 (JRC), GreenComp (JRC), Eurostat/European Commission labour statistics, CEDEFOP skills forecasts, OECD *Skills Outlook 2023*.

Chapter 4 - Prototype Module Designs (v1.0)

Public-facing outlines of the three pilot modules that will be translated, tested with VET learners in each partner country, and released as open educational resources.

4.1 Common format (applies to all three modules)

- **Mode & time:** 6–8 hours self-paced online learning.
- **Learning media:** short videos (≤3 min).
- **Pedagogy:** clear objectives up front; learn-by-doing tasks; reflection prompts; peer collaboration options.
- **Assessment:** auto-marked knowledge checks throughout; **one authentic “performance task”** per module with a rubric mapped to the relevant EU competence framework(s) (DigComp 2.2 and/or GreenComp).
- **Accessibility & languages:** WCAG-aligned design (transcripts, alt-text, keyboard navigation), plain-language “explainers,” and multilingual rollout (EN/ES/DE/BG). Spanish, German and Bulgarian versions are prepared by GO GREEN, COPERNICUS and Beehive respectively; COPERNICUS integrates all language versions on the project e-learning platform.
- **Open use:** all teaching/learning materials will be published as **OER** for reuse with attribution.
- **Where these modules sit in the project:** designed under **Activity A3** (content analysis and development, led by GO GREEN), then piloted in **3-day local workshops** in Spain, Germany, and Bulgaria (15 VET learners per country), followed by translation and **official launch on the COPERNICUS platform**.

4.2 Module 1 — *Digital Foundations for VET Learners*

Focus: DigComp 2.2 Areas 1–2–4 at **A1–A2** level (information & data; communication & collaboration; safety & wellbeing).

Who it’s for: entry-level VET learners who need confident, safe, and purposeful everyday digital practice.

Learning outcomes (extract)

Learners will be able to:

1. **Search, filter, and evaluate** information credibly; manage files and basic datasets ethically (DigComp 1.1–1.3).

2. **Communicate and collaborate** safely and inclusively in digital spaces (2.1–2.6).
3. Apply good practices in **privacy, cybersecurity, and digital wellbeing** (4.1–4.4).

Structure & sample activities

1. **Smart searching & source credibility** → Try-it-now tasks on refining queries; CRAAP-style quick checks; “my top-3 sources” reflection.
2. **Organising & sharing work** (cloud, permissions) → Hands-on: set folder structures; practice sharing with least-privilege settings; versioning basics.
3. **Safer online** (passwords, phishing, privacy settings) → Micro-scenarios; 2FA setup walkthrough; personal “safety checklist.”
4. **Teaming online** (respectful, inclusive collaboration) → Netiquette micro-cases; captioning and accessibility quick wins; co-editing a short doc.

Performance task

Create a **2–3 minute “how-to” screencast** that demonstrates a secure, inclusive collaboration workflow for a simple class project (e.g., set up a shared folder with correct permissions, use comments, track changes, and apply basic privacy settings). Submit the screencast plus a short attestation of “safe-by-design” choices.

Assessment

Rubric aligned to DigComp descriptors (A1→A2): credibility checks applied; appropriate sharing controls; correct identification of a phishing risk; evidence of inclusive communication choices.

Implementation & hosting: COPERNICUS will publish and maintain the module on the project e-learning platform as part of the A3→A8 pathway.

4.3 Module 2 — *Sustainability in Practice for Work & Training*

Focus: GreenComp core competences via **micro-projects** on waste, energy, and materials (embodying values; embracing complexity; envisioning futures; acting for sustainability).

Who it’s for: VET learners across occupations who need **actionable** sustainability literacy.

Learning outcomes (extract)

Learners will be able to:

1. Explain local environmental impacts relevant to their training/occupation (*embodying values*).

2. Conduct a **mini eco-audit** (waste or energy) using a guided template → analyse results and propose feasible improvements (*acting for sustainability*).
3. **Communicate** a small sustainability action clearly to peers/clients, acknowledging trade-offs and next steps (*complexity & envisioning*).

Structure & sample activities

1. **Systems thinking primer** → Map where impacts occur along a simple product/service chain.
2. **Measure → interpret → act** → Collect a small data sample (e.g., bins audit, device energy use), plot simple charts, identify a “lowest-effort/high-impact” change.
3. **Circularity basics** → Reduce/reuse/repair mini-cases; identify a “swap” or “redesign” opportunity.
4. **Communicating impact** → Draft a 150-word update or 1-slide visual for a workplace noticeboard or client.

Performance task

Submit a **short eco-improvement plan** (template provided) plus a **2-minute pitch video** that references data from the audit and explains one practical change you will trial over the next 2 weeks.

Assessment

Rubric checks evidence quality (data collected), feasibility of action, acknowledgement of constraints, and clarity of communication in a real-world context.

Design & leadership: Content design coordinated by **GO GREEN** under A3; piloted first in Spain and then adapted across partner contexts before translation and platform launch.

4.4 Module 3 — *Green Entrepreneurship Essentials*

Focus: turning sustainability ideas into **small projects or micro-ventures** and reinforcing digital skills for outreach.

Who it’s for: learners with an idea—or a problem they care about—who need a simple, ethical pathway from **awareness to doing**.

Learning outcomes (extract)

Learners will be able to:

1. Draft a one-page **green value proposition** (problem–solution–benefit–impact).
2. Build a **mini canvas** with simple costs, benefits, and environmental value.

3. Prototype a **digital touchpoint** (site or social page) and plan **ethical outreach** (consent, inclusion, accessibility).

Structure & sample activities

1. **From idea to value** → Who benefits? Who might be harmed? Quick stakeholder scan; define “customer & planet” benefits.
2. **Basic numbers that matter** → Cost items, pricing, “break-even on a napkin;” micro-unit economics.
3. **Digital presence & responsible marketing** → Create a basic landing page or social profile; practice inclusive language and visual accessibility.
4. **Pilot & iterate** → Collect feedback from 3–5 real people; adapt; document one improvement.

Performance task

A **3-part submission**: (a) value proposition one-pager; (b) mini canvas with green impacts; (c) mock-up of a digital touchpoint **plus** a short, ethical outreach plan.

Assessment

Rubric emphasises clarity of value, realism of costs, genuine environmental benefit, and compliance with responsible digital practices.

Entrepreneurship lead: Beehive guides entrepreneurship content and localisation for Bulgaria; the module is then translated and rolled out across partners.

4.5 Cross-cutting implementation notes

- **Piloting & improvement pathway**

Each module v1.0 is piloted in 3-day national workshops (Spain, Germany, Bulgaria; **15 VET learners** each). Feedback (surveys, observations, interviews) informs content refinements before translation and platform launch.

- **Translation & launch window**

After pilots, partners complete **feedback integration, multilingual translation (EN/ES/DE/BG), and publication on the COPERNICUS platform** in the dedicated A8 phase.

- **Open licensing & reuse**

All education resources produced under the project will be made available as **Open Educational Resources (OERs)** so VET providers can adopt, adapt, and remix them with attribution.

4.6 What users (learners and trainers) will receive

- **Module handbook (PDF)** per module: objectives, lesson sequence, tips for facilitators, and printable worksheets.
- **Rubrics:** concise A1–A2 DigComp mapping (Module 1) and GreenComp-aligned action/evidence criteria (Module 2), plus a simple innovation rubric (Module 3).

Chapter 5 - Assessment, Quality Assurance & Accessibility

5.1 Assessment model (how learning is evidenced)

We use a simple, transparent model that matches the learning experience described in Chapter 4:

- **Knowledge checks:** short, auto-marked items punctuate each lesson (true/false, single choice, “spot the risk”, drag-and-drop sequences). These provide instant feedback and remediation pointers.
- **One authentic performance task per module:** a short, practical assignment that mirrors a real-world task and demonstrates transfer of learning.
- **Module rubrics:** concise scoring guides mapped to EU competence frameworks—**DigComp 2.2** for Module 1 and **GreenComp** for Module 2; Module 3 uses a lightweight **innovation rubric** focused on feasibility and green value.
- **Evidence bundle:** each learner uploads (i) their performance task output, (ii) a brief reflection (3–5 prompts supplied), and (iii) optional peer feedback if the facilitator enables the collaboration option.
- **Pass/merit/excellent** achievement levels^{**}:^{**} determined by rubric thresholds; knowledge checks are formative and do not dominate the final judgement.

5.2 Rubrics at a glance

Module 1 – Digital Foundations (DigComp A1–A2)

Each criterion scored 0–2 (Not yet / Emerging / Demonstrated), summed to an overall level.

- **Information & data basics** (find, filter, judge credibility): recognizes reliable sources; uses simple strategies (keywords, filters); cites where required.
- **Communication & collaboration** (respectful, inclusive, purposeful): chooses the right channel; sets permissions; follows netiquette; contributes to a shared document responsibly.
- **Safety & wellbeing** (privacy, passwords, phishing awareness): applies “safe-by-design” choices (strong passwords, 2FA); identifies common scams; adjusts device/privacy settings.
- **Workflow basics** (organizing files, versioning): uses folders and clear names; shares with correct rights; keeps a tidy, recoverable workspace.

Module 2 – Sustainability in Practice (GreenComp)

Criterion-based, 0–2 scale; evidence comes from a mini eco-audit and action plan.

- **Values & awareness:** explains local, job-relevant impacts (waste/energy/materials) in plain language.
- **Complexity & systems:** identifies where impacts occur in a process; spots trade-offs.
- **Acting for sustainability:** proposes realistic improvements (reduce/reuse/repair), with simple metrics.
- **Communication for change:** presents the eco-improvement plan clearly to peers/clients, using data collected.

Module 3 – Green Entrepreneurship Essentials (Innovation rubric)

Lightweight rubric, 0–2 scale, for a three-part submission (value proposition, mini-canvas with impacts, digital mock-up).

- **Problem–solution fit:** articulates the need and a credible solution; shows “green by design”.
- **Feasibility & basic numbers:** provides simple cost/benefit thinking; states assumptions.
- **Responsible digital presence:** mock-up/site/social page shows accessibility basics and ethical outreach.
- **Iteration mindset:** uses feedback to refine; outlines the next experiment.

Learner-facing supports

Every module ships with a **Module Handbook (PDF)** for learners and facilitators (objectives, sequence, tips, printable worksheets) and the **rubric** on one page for quick reference—as set in the Chapter 4 update.

5.3 Quality assurance (QA) process

Who reviews what

- **GO GREEN** – pedagogy, sustainability accuracy, plain-language clarity (A3 lead).
- **COPERNICUS** – e-learning integration, usability, analytics readiness.
- **Beehive** – entrepreneurial relevance and local (BG) examples.

5.4 Accessibility & inclusion (design commitments)

All modules are built with **WCAG-aligned** practices and mobile-first constraints so that entry-level devices and bandwidth can handle the content:

- **Media:** ≤3-minute videos with open transcripts/captions; images/infographics with **alt text**; keyboard navigable activities.
- **Readability:** plain-language “explainers,” short paragraphs, consistent icons, no color-only meaning.
- **Interaction:** time-independent activities; visible focus state; large click targets.
- **Languages:** **EN/ES/DE/BG** rollout—GO GREEN prepares Spanish, Beehive prepares Bulgarian; COPERNICUS prepares German and integrates all languages in the project e-learning platform.
- **Open use:** every output is released as **Open Educational Resources (OER)** for reuse with attribution, as required in the partnership contracts.

5.5 Data protection & academic integrity

- **Minimal personal data** is processed in the platform to complete activities and analytics; learners receive a simple privacy notice and can download/delete their submissions upon request.
- **Integrity:** tasks are practical and context-specific; where feasible, randomization in quizzes and a reflective component reduce copy-paste risks.
- **Attribution:** all third-party media in teaching materials is used under suitable open licenses and credited in a visible “Resources” block.

Chapter 6 - Implementation & Handover to Phase 2

6.1 What we are delivering now (v1.0 handover package)

For each module we provide a complete, ready-to-test set:

1. **Module content** (editable sources + exported web package): lessons, activities, and knowledge checks.
2. **Module Handbook (PDF)**: objectives, lesson sequence, facilitator tips, printable worksheets.
3. **Rubric (one-pager)**:
 - Module 1—DigComp A1–A2 mapping;
 - Module 2—GreenComp action/evidence criteria;
 - Module 3—innovation rubric.
4. **Accessibility bundle**: captions/transcripts, alt-text list, color/contrast checks, keyboard-path notes.
5. **Translation kit**: master text, media scripts and glossary for ES/DE/BG; structure mirrors platform slots.
6. **Release notes**: version, known issues, prerequisites, and “how to” for platform upload.

6.2 Definition of Done (acceptance criteria for v1.0)

- Content aligns with the Chapter 4 format (6–8 h self-paced; ≤3-min videos; learn-by-doing tasks; one performance task with rubric).
- Rubrics correctly map to the intended frameworks (DigComp 2.2 / GreenComp) and use the agreed 0–2 scale.
- Accessibility checklist is passed (captions, alt text, keyboard navigation, readable contrast, plain language).
- Artifacts are OER-ready (attribution and licensing note included).
- A3 lead sign-off recorded; packages compile without errors on the COPERNICUS platform.

6.3 Phase 2 testing & roles (who does what)

- **GO GREEN (ES)**: hosts the mid-term coordination meeting and runs the **3-day local workshop in Spain** (15 VET learners) to test modules and gather feedback; also prepares the Spanish translation.

- **COPERNICUS (DE):** uploads v1.0 to the **project e-learning platform**, runs the **3-day German workshop** (15 learners), monitors usability/analytics, prepares the German translation and leads the official launch after refinements.
- **Beehive (BG):** runs the **3-day Bulgarian workshop** with **15 VET learners** and prepares the Bulgarian translation and localization examples.

The project will run three national workshops (Spain, Germany, Bulgaria; 15 VET learners each; 3 days) followed by feedback consolidation, translation, and the official platform launch—the exact sequence that Phase 2 will execute.

6.4 Feedback & change control

- **In-session tools:** observation notes, short learner surveys, and quick interviews at each workshop.
- **Synthesis:** partners upload raw data to a shared workspace; COPERNICUS compiles a cross-site summary; GO GREEN leads the pedagogical recommendations; Beehive adds entrepreneurship/localization input.
- **Revision sprint:** one consolidated change log per module; only medium/high-impact edits make it into v1.1 before launch; low-impact ideas move to a backlog.

6.5 Translation & platform publication

- **Spanish** (GO GREEN), **German** (COPERNICUS) and **Bulgarian** (Beehive) translations follow the master glossary; any localization (examples, currency, terms) is noted in a translator's log.
- **Integration:** COPERNICUS performs formatting, QA checks, and multi-language menu wiring, then opens the modules publicly on the project platform.

6.6 Monitoring & success indicators (post-launch)

We will track simple indicators on the platform and through quick surveys, in line with the project's evaluation plan:

- **Registered users accessing modules (target ≈ 100)** and teacher uptake;
- Learner satisfaction (aim ≥ 80% “good–excellent”);
- Completion of the authentic performance task;
- Download/use of open materials (Toolkit later in Phase 3).

6.7 Risks & mitigations

- **Bandwidth/device limits** → keep media short; provide low-bandwidth alternatives.

- **Translation drift** → shared glossary; back-translation spot checks.
- **Platform issues** → COPENICUS sandbox testing before public release; rollback plan.
- **Over-complex assignments** → retain “small, real, doable” ethos; one task per module.

6.8 OER release & dissemination readiness

All teaching/learning materials are released as **OER for reuse with attribution** and carry a visible attribution note. Partners use the project website/platform and social media to announce the public release; materials remain available so that VET staff and institutions can adopt and adapt them. Contractual provisions require making educational resources available as OER and using the project/EU co-funded logos in project activities.

Chapter 7 - Evidence Base & References

How these sources were used

The project's A3 outputs (needs analysis, learning outcomes, and prototype module designs) are grounded in European competence frameworks and reputable labour-market evidence. Each reference below is accompanied by a short note on *how it informed A3* and where it connects to the three prototype modules.

7.1 Competence Frameworks

1. **DigComp 2.2 — Digital Competence Framework for Citizens (JRC)**

How used: Set the structure for Module 1 outcomes and formative checks (focus on Areas 1–2–4 at A1–A2 levels) and informed the competence-mapped rubric language (“can... with guidance”, “can identify basic risks”, etc.).

2. **GreenComp — European Sustainability Competence Framework (JRC)**

How used: Provided the backbone for Module 2 outcomes and for the choice of active pedagogies (local eco-audits, problem-based micro-projects). Emphasis on the four GreenComp areas: embodying values; embracing complexity; envisioning futures; acting for sustainability.

7.2 Labour-Market Signals Relevant to VET

1. **CEDEFOP Skills Forecast (2023) and digital-skills scenario work (2024)**

How used: Triangulated the “twin transition” demand signal and the need to raise digital skills in lower-skilled occupations; this shaped the baseline scope (A1–A2 DigComp) and the inclusion imperative in our VET-first design.

2. **Eurostat — ICT specialists updates (2024/2025)**

How used: High-level indicator (ICT specialists ≈ ~5% of EU employment in 2024) used as a *proxy signal* for the digital intensity of work across the economy (not limited to ICT occupations).

3. **OECD Skills Outlook 2023**

How used: Framed the blended skillsets required for resilient, just transitions—cognitive + digital + green—supporting Module 3’s “green entrepreneurship essentials” and practical numeracy for basic cost/benefit decisions.

7.3 Methodological & Accessibility References

1. **WCAG 2.2 (AA) accessibility guidance**

How used: Shaped cross-module requirements (transcripts for ≤3-minute videos, alt text, keyboard navigation, colour-independent meaning).

2. Open Educational Resources (OER) practice and Creative Commons BY 4.0

How used: Licensing choice for all learning/teaching materials to enable reuse with attribution.

7.4 Selected Bibliography (annotated)

- **Vuorikari, R., et al. (2022).** *DigComp 2.2: The Digital Competence Framework for Citizens*. JRC, European Commission. — Structure and examples used for Module 1 outcomes and rubric language.
- **Bianchi, G., et al. (2022).** *GreenComp: The European Sustainability Competence Framework*. JRC, European Commission. — Framed Module 2 outcomes and pedagogies.
- **CEDEFOP (2023–2024).** *EU Skills Forecast and Digitalisation & Skills Scenarios*. — Informed inclusion, baseline digital levels, and just-transition messaging for VET.
- **Eurostat (2024/2025).** *ICT specialists as a share of employment (European Union)*. — Used as an economy-wide digitalisation signal.
- **OECD (2023).** *Skills Outlook 2023: Skills for a Resilient Green and Digital Transition*. — Supported the blended-skills approach and Module 3’s “value + impact” framing.
- **W3C (2023).** *Web Content Accessibility Guidelines (WCAG) 2.2 (AA)*. — Guided cross-module accessibility requirements.
- **Creative Commons (2013, updated).** *CC BY 4.0 International Public License*. — Licence governing reuse of all produced materials.

Chapter 8 - Annexes

Annex 1 – Needs Analysis: Methodology

This annex summarises how the needs analysis for A3 was carried out and how the findings were used to design the three prototype modules.

1.1 Objectives of the needs analysis

The needs analysis aimed to:

- identify the most relevant **digital** and **sustainability** competences for VET learners;
- understand **labour market trends** linked to the green and digital transitions;
- collect **practical feedback** from trainers and learners in Spain, Germany and Bulgaria;
- translate these elements into **concrete learning outcomes** and topics for three short online modules.

1.2 Steps in the process

The needs analysis followed three simple steps:

1. Desk research

- review of European competence frameworks on digital skills and sustainability;
- review of European and national reports on skills needs in VET and in the labour market;
- scan of existing open training materials and previous projects in similar areas.

2. Partner consultations

- internal online meetings with staff from all three organisations (trainers, project managers, youth workers);
- collection of examples of gaps they see in their local learners (digital basics, green awareness, entrepreneurship);
- exchange of short case studies from each country.

3. Field feedback (light and informal)

- short conversations with VET learners and recent graduates (small groups identified by each partner);

- asking what they find difficult in digital skills, in sustainability in practice, and in starting or improving small “green” ideas.

1.3 How the findings were used

All of this information was summarised in a short internal report and used to:

- decide that the project would produce **three concise modules** (digital basics, sustainability in practice, green entrepreneurship);
- write the **learning outcomes** for each module, so they match real needs;
- choose **examples, tasks and performance assignments** that are realistic for VET learners;
- ensure that materials can be **translated and adapted** into Spanish, German and Bulgarian and used on the common e-learning platform.

Annex 2 – Main Sources Used in the Needs Analysis

This annex lists the main types of documents and data that were used when analysing needs. It is not an exhaustive bibliography but shows clearly the **evidence base** behind the design.

2.1 EU competence frameworks

- **DigComp 2.2 – Digital Competence Framework for Citizens**

Used to structure the digital learning outcomes in Module 1 (information and data, communication and collaboration, safety and wellbeing at basic levels).

- **GreenComp – European Sustainability Competence Framework**

Used to structure the sustainability learning outcomes in Module 2 (values, understanding complexity of systems, acting for sustainability).

2.2 Skills and labour market sources

- European and national **skills forecasts and labour market reports**, especially on:
 - the impact of **digitalisation** on all job profiles;
 - the role of **green skills** and the green transition;
 - the need to combine digital, green and entrepreneurial competences in VET.

- **Statistics on digital skills and ICT use** in the EU, showing that digital competences are increasingly required, not only in ICT jobs but in many basic occupations.

2.3 Practice and stakeholder input

- **Internal experience** of the three partner organisations working with:
 - VET learners with fewer opportunities,
 - young adults in transition between education and work,
 - small organisations and youth initiatives interested in green projects.
- **Short interviews and informal feedback** from:
 - VET learners (difficulties with basic digital tools, online safety, understanding sustainability beyond theory);
 - trainers (lack of short, practical materials that combine digital + green + entrepreneurship).

2.4 Why this is sufficient

Even though A3 is part of a **small-scale partnership**, the combination of:

- recognised **EU frameworks**,
- current **skills and labour market information**, and
- direct **partner and learner feedback**

is sufficient to justify the design of three compact modules and to show that the content responds to real needs in VET.

Annex 3 – Summary of Identified Needs and A3 Response

This annex links the main needs found in the analysis with the concrete response in A3 (the three modules).

3.1 Summary of needs

Area	Main need identified	Typical examples from partners
Digital basics	Learners often lack safe and efficient use of basic digital tools	Difficulty finding reliable information; confusion about sharing documents; weak



Area	Main need identified	Typical examples from partners
	(search, cloud, collaboration, privacy).	passwords and low awareness of phishing.
Sustainability in practice	Sustainability is often known only at “theoretical” level; learners do not know what to do concretely in their context.	Learners know about climate change but do not know how to reduce waste or energy in their school, workplace or daily life.
Green entrepreneurship	Many learners have ideas but do not know how to structure them or assess costs, feasibility and impact.	Small “green” ideas stay informal: no simple budget, no basic plan, no simple online presence.
Accessibility & language	Materials are often long, text-heavy and only in English; this excludes many VET learners.	Learners prefer short modules, clear language, subtitles and examples in their own language.

3.2 How A3 responds

Need	A3 response (modules and design)
Digital basics	Module 1 – Digital Foundations for VET Learners: 6–8 hours self-paced; short videos; practical tasks on safe search, file sharing, online collaboration and privacy; DigComp used as reference.
Sustainability in practice	Module 2 – Sustainability in Practice for Work & Training: eco-audit template; small actions on waste/energy; simple improvement plan and short pitch; GreenComp used as reference.
Green entrepreneurship	Module 3 – Green Entrepreneurship Essentials: one-page value proposition, mini canvas, simple numbers and basic digital presence; focus on realistic first steps and ethical outreach.
Accessibility & language	All three modules: short lessons; ≤3-minute videos; captions and alt-text; plain language; later translation into Spanish, German and Bulgarian and use on the COPERNICUS e-learning platform; materials shared as OER for reuse.

These three annexes show that:

- the partner consortium used **recognised European frameworks** and **up-to-date skills information**,
- combined this with **concrete feedback from learners and trainers**, and
- transformed these elements into **three short, realistic modules** that are clearly justified by the needs analysis.

Appendix A — Outcome Maps: LO-by-LO Alignment to DigComp 2.2 & GreenComp

What this is: a clear, page-ready map of the learning outcomes (LOs) for the three prototype modules, each aligned LO-by-LO to the **EU Digital Competence Framework (DigComp 2.2)** and the **European Sustainability Competence Framework (GreenComp)**.

These maps make it easy for educators, reviewers and stakeholders to see *what each learner will be able to do, which EU competence(s) it develops, and how it will be evidenced and assessed*. The module set and A3 focus on digital and green skills are defined in the approved project description.

How to read the tables

- **Level:** For DigComp, we use **A1–A2** descriptors (foundation–basic). For GreenComp, we use **Intro/Applied** progression labels suited to small-scale VET contexts.
- **Evidence:** The authentic artefact(s) learners produce.
- **Rubric focus:** What assessors look for (aligned to the shared A3 rubrics).
- **Framework keys:** DigComp areas (1–5) and competences (e.g., **1.1, 4.2**); GreenComp areas (**Values, Complexity, Futures, Action**) and exemplar competences (e.g., **Systems thinking, Individual initiative**).

Module 1 — Digital Foundations for VET Learners (A1–A2)

LO code	Learning outcome (what learners can do)	EU framework alignment	Level	Evidence (assessment product)	Rubric focus (excerpt)
M1-LO 1	Search, filter and evaluate information credibly; avoid misinformation.	DigComp: 1.1 Browsing/searching; 1.2 Evaluating .	A1→A2	Short search plan + annotated results (2–3 sources) showing query choices, checks (author, date, bias).	Finds at least one authoritative source; states 2 credibility checks ; explains why



LO code	Learning outcome (what learners can do)	EU framework alignment	Level	Evidence (assessment product)	Rubric focus (excerpt)
					one source is rejected.
M1-LO 2	Organise & share files in cloud storage with appropriate permissions.	DigComp: 1.3 Managing data; 2.2 Sharing ; 2.1 Interacting.	A1→A2	Screencast (≤3 min) showing folder naming, versioning, link-sharing (viewer/commenter).	Clear structure; correct permission; demonstrates version control or file history.
M1-LO 3	Apply basic device & account security (updates, strong passwords, 2FA).	DigComp: 4.1 Protecting devices; 4.2 Personal data & privacy.	A1→A2	Checklist + screenshots: OS/app updates on; password manager or passphrase; 2FA enabled; phishing example flagged.	100% of required controls enabled; identifies one phishing cue (sender, URL, urgency).
M1-LO 4	Communicate and collaborate respectfully online (netiquette, inclusive language, roles).	DigComp: 2.4 Collaborating; 2.5 Netiquette ; 2.6 Digital identity.	A1→A2	Team charter (one page) + evidence of comments/mentions resolving a simple task.	Uses inclusive phrasing; assigns roles; maintains positive digital identity.
M1-LO 5	Manage digital wellbeing (attention, posture,	DigComp: 4.3 Health & wellbeing.	A1→A2	Personal settings log + reflection (150–200 words) on	At least 2 settings adjusted; realistic habit goal;

LO code	Learning outcome (what learners can do)	EU framework alignment	Level	Evidence (assessment product)	Rubric focus (excerpt)
	breaks) and safe settings.			focus/break strategy.	reflection links action→benefit.
M1-LO 6	Make eco-aware choices in everyday digital use (e.g., storage tidy-up, energy).	DigComp: 4.4 Protecting the environment.	A1→A2	Before/after snapshot of storage clean-up or power setting change + estimate of impact.	Identifies a concrete waste reduction ; explains why it matters.

Module 1 performance task (capstone): produce a ≤3-minute “**how-to**” **screencast** of a secure, inclusive collaboration workflow for a simple class project, with a brief **attestation of “safe-by-design” choices** (passwords/2FA, permissions, netiquette). (Assessed with DigComp A1–A2 rubric.)

Module 2 — Sustainability in Practice for Work & Training

LO code	Learning outcome (what learners can do)	EU framework alignment	Level	Evidence (assessment product)	Rubric focus (excerpt)
M2-LO 1	Explain local environmental impacts relevant to one’s vocation (e.g., energy, waste).	GreenComp – Values: Valuing sustainability, Promoting nature; Complexity: Systems	Intro→ Applied	One-page brief naming 1–2 key impacts with local example and a simple causal diagram.	Correctly names impact + driver ; shows a basic system relation (A→B).



LO code	Learning outcome (what learners can do)	EU framework alignment	Level	Evidence (assessment product)	Rubric focus (excerpt)
		thinking. DigComp (support): 1.1/1.2 info use.			
M2-LO 2	Conduct a mini eco-audit (waste/energy) using a guided template.	GreenComp – Complexity: Systems thinking; Action: Individual initiative. DigComp (support): 1.3 Managing data.	Intro→ Applied	Audit sheet (measure→interpret) + photos/notes.	Measurements complete; baseline summarised; one data-based insight.
M2-LO 3	Propose actionable improvements (reduce/reuse/repair) with feasibility notes.	GreenComp – Futures: Futures literacy, Adaptability; Action: Individual initiative.	Intro→ Applied	Action card (What, Why, Cost, Impact, Who, When).	Feasible next step; clear benefit; assigns responsibility & timeframe.
M2-LO 4	Communicate findings & next steps to peers/clients using plain language.	GreenComp – Complexity: Critical thinking; Action: Collective action.	Intro→ Applied	2-minute pitch video + 3-slide deck (figures, photo evidence).	Message clarity; correct figures; call-to-action invites participation.

LO code	Learning outcome (what learners can do)	EU framework alignment	Level	Evidence (assessment product)	Rubric focus (excerpt)
		DigComp (support): 2.1 Interacting; 3.1 Creating.			

Module 2 performance task (capstone): submit a **simple eco-improvement plan** (template + 2-minute pitch video) referencing data from the audit. (Assessed with GreenComp action/evidence rubric, with DigComp support for evidence quality.)

Module 3 — Green Entrepreneurship Essentials

LO code	Learning outcome (what learners can do)	EU framework alignment	Level	Evidence (assessment product)	Rubric focus (excerpt)
M3-LO 1	Frame a green value proposition (problem → solution → environmental/social value).	GreenComp – Complexity: Problem framing; Futures: Futures literacy; Action: Individual initiative.	Intro→Applied	One-page value proposition with customer + planet benefits.	Clear pain/need; solution fits; identifies green value succinctly.
M3-LO 2	Draft a mini canvas with basic costs, pricing, and impact indicators.	GreenComp – Futures: Exploratory thinking; Action: Individual initiative.	Intro→Applied	Mini canvas (costs, pricing, assumptions, 1–2 impact KPIs).	Numbers plausible; at least one measurable impact KPI .

LO code	Learning outcome (what learners can do)	EU framework alignment	Level	Evidence (assessment product)	Rubric focus (excerpt)
M3-LO 3	Set up an accessible digital touchpoint (simple site or social page) and a responsible outreach plan.	DigComp: 3.1 Creating content; 2.2 Sharing; 2.6 Digital identity; 4.4 Environment; 3.3 Copyright & licences.	A1→A2	Live mock-up (or screenshots) + ethical outreach plan (audience, consent, frequency).	Contact info present; accessibility basics (alt text/transcripts); CC attribution correct.
M3-LO 4	Test & iterate ethically using feedback/analytics; identify next steps.	GreenComp – Futures: Adaptability; Action: Individual initiative; DigComp: 5.2 Identifying tech responses; 5.3 Creative use.	A1→A2 / Applied	Test log (what was tested, result, change made) + next-step note.	Uses simple metric; improvement linked to feedback; respects privacy/consent.

Cross-module assessment anchors (for assessors)

- **Authentic evidence only:** annotated searches, screencasts, audit sheets, action cards, mini canvases, pitch videos, mock-ups and test logs.
- **Rubrics in use:**
 - **Module 1:** concise **DigComp A1–A2** rubric (accuracy, safety, collaboration, wellbeing, environmental awareness).
 - **Module 2: GreenComp action/evidence** rubric (relevance, systems view, feasibility, clarity of call-to-action).



- **Module 3: Innovation rubric** (problem framing, value clarity, feasibility, ethical digital practice, iteration discipline).