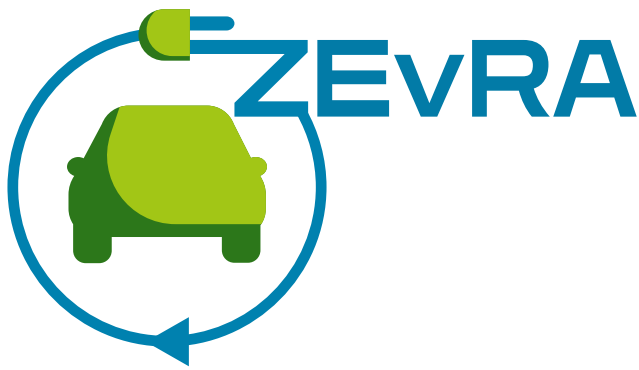




Zero Emission electric Vehicles enabled by haRmonised circularity

Deliverable 5.5

Full Training Packages

30 JUNE 2026 (M30)

Project information

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ZEVR project abstract

ZEVR's main objective is to improve the circularity of light-duty EVs throughout their entire value chain, from materials supply and manufacturing to end-of-life (EoL) processes, which aligns with the European Union's goal of achieving zero CO₂e emissions by 2035, particularly in the EV value chain. To do so, ZEvRA will develop a Design for Circularity (DfC) methodology and a holistic circularity assessment aimed at improving the production of electric vehicles (EVs) based on the 9Rs. This methodology will be validated by developing zero emission solutions for the most important automotive materials, covering > 84% material mix: steel, three versions of aluminium (wrought, casting, and foam), thermoplastics composites (long and continuous fibre-reinforced), unfilled/short fibre plastics, glass, tyres and Rare Earth Elements (REE). These solutions will be supported by a set of digital tools to support the manufacturing of the use cases, the assessment of circularity, traceability, and the virtual integration of components into a full replicable vehicle.

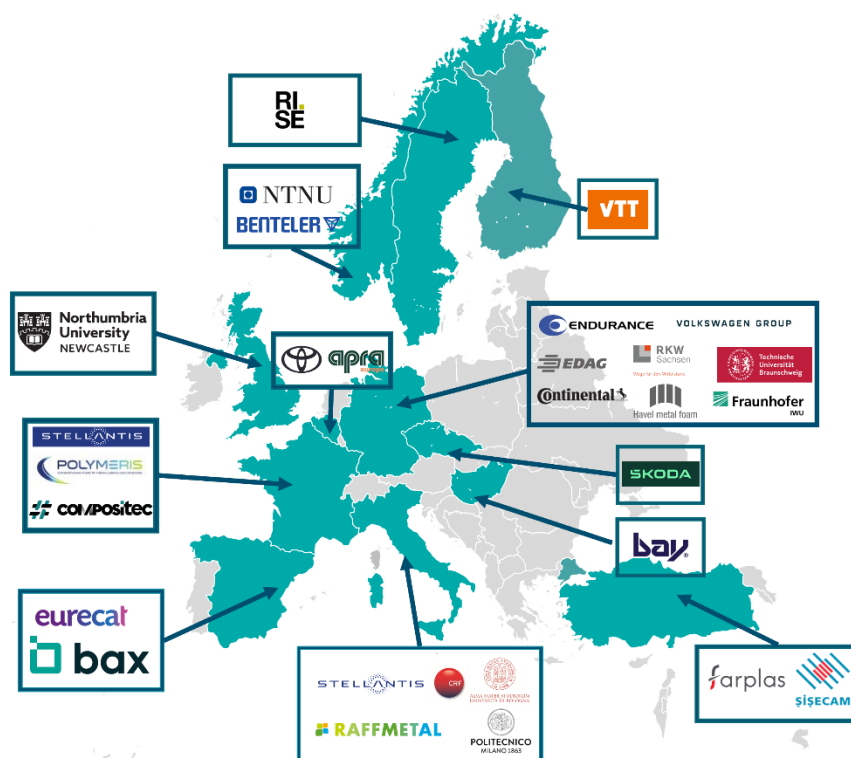


Figure 1: ZEvRA Consortium

To maximise the outreach of our methodology and zero emission solutions, ZEvRA will develop a dedicated training & upskilling programme for the automotive workforce and academia, together with activities aimed at increasing awareness & acceptability of the proposed zero emission solutions. Lastly, circular business models targeting EoL and logistics aimed at improving the economic feasibility of circularity in EVs are advanced. ZEvRA's innovations aim to improve zero emission approaches in the life cycle and value chain of at least 59% of European EVs by 2035 through the 5 OEMs and Tier 1's that are part of the consortium (Figure 1), which includes industry and academia covering the entire automotive value chain.

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Disclaimer

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Abbreviations and Acronyms

Table 1: *Abbreviations and Acronyms*

Abbr.	Full name
9Rs	Nine Circular Economy Strategies (Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover)
AI	Artificial Intelligence
APRA	Automotive Parts Remanufacturers Association Europe
BAX	BAX Innovation (consortium partner / dissemination)
CE	Circular Economy
CIRMA	Circular Materials & Mobility Conference
DfC	Design for Circularity
DPP	Digital Product Passport
EDAG	EDAG Engineering (engineering consultancy)
END / ENDURANCE	Endurance Technologies (consortium industrial partner)
EoL	End-of-Life
ESPR	Ecodesign for Sustainable Products Regulation
EU	European Union
EUT	EURECAT (Technology Centre of Catalonia) — ZEvRA consortium partner
EV / EVs	Electric Vehicle(s)
FRA	Fraunhofer IWU (Institute for Machine Tools and Production Technology) — ZEvRA consortium partner
GA	Grant Agreement
HCA	Harmonised Circularity Assessment
HPDC	High-Pressure Die Casting
INCAR-CSIC	National Centre for Metallurgical Research — Spanish National Research Council
ISO	International Organisation for Standardisation
IWU	Institut für Werkzeugmaschinen und Umformtechnik (Fraunhofer Institute for Machine Tools and Forming Technology)
KPI / KPIs	Key Performance Indicator(s)
LCA	Life Cycle Assessment
LCC	Life Cycle Costing
M30	Month 30 of the ZEvRA project (June 2026)
MFA	Material Flow Analysis
MQTT	Message Queuing Telemetry Transport (IoT messaging protocol)
NTNU	Norwegian University of Science and Technology — ZEvRA consortium partner
OEM / OEMs	Original Equipment Manufacturer(s)
OPC UA	Open Platform Communications Unified Architecture (industrial communication standard)
PDCA	Plan-Do-Check-Act (continuous improvement cycle)
PO	Project Officer (European Commission)
POLIMI	Politecnico di Milano (consortium partner)
PU	Public (dissemination level)
QR	Quick Response (code) — two-dimensional barcode used for digital tracking
REE	Rare Earth Elements
RFID	Radio-Frequency Identification
RKW	RKW Sachsen GmbH — ZEvRA consortium partner (technology transfer and SME engagement)
RTL	Rebuilding to Last (EU-funded project; source of Category D supporting materials)

SALIENT	Horizon Europe project on safer, lighter, circular, and smarter vehicle structure design (UNN as technical coordinator)
S-LCA	Social Life Cycle Assessment
SME / SMEs	Small and Medium-sized Enterprise(s)
UAB	Universitat Autònoma de Barcelona
UBO	University of Bologna (Alma Mater Studiorum) — ZEvRA consortium partner
UKRI	UK Research and Innovation
UNN	Northumbria University Newcastle — ZEvRA consortium partner and WP5 / Task 5.2.2 lead
UPC	Universitat Politècnica de Catalunya
VTT	VTT Technical Research Centre of Finland
WP / WP1–WP6	Work Package / Work Packages 1 to 6 of the ZEvRA project
ZENODO	Open-access research data repository operated by CERN (used for CIRMA 2026 proceedings)
ZEvRA	Zero Emission electric Vehicles enabled by haRmonised circulaRity (Horizon Europe project, GA No. 101138034 / UKRI No. 10105316)

Executive summary

This deliverable presents the full suite of training resources developed under Subtask 5.2.2 (Concept and Material Development for Specific Groups) of the ZEvRA project, led by Northumbria University (UNN) in collaboration with NTNU, UBO, RKW, FRA, and EUT. It documents the design, development, and delivery of ZEvRA's training and knowledge transfer activities at M30, covering the complete portfolio of courses, webinars, in-house workshops, and annual educational conferences produced during the first thirty months of the project.

The training portfolio has been built on the principle that knowledge of circularity in the automotive sector must be as diverse in format as it is in content. Six original ZEvRA-developed courses are now live on the ZEvRA Academy — the project's Moodle-based educational platform, hosted by EUT — spanning topics from Circular Economy fundamentals and Life Cycle Assessment to Lightweight Design by Recycling-based Aluminium Foam, Design for Circularity, Quality and Traceability of Recycled Materials, and Secondary Aluminium Alloys for High-Pressure Die Casting. Two further courses — Industry 4.0 Digital Enablers for Circular Automotive Value Chains (NTNU) and Eco-Design (UNN) — are in active development and will be published before the project's conclusion. All live courses award a digital certificate upon completion and are freely accessible to anyone who registers on the ZEvRA Academy. The platform has received 2,156 visits since February 2026 and has registered a total of 60 enrolments across the six live courses.

Alongside the digital course portfolio, ZEvRA's training programme encompasses a rich programme of live events. Three in-house workshops have been delivered — by Fraunhofer IWU (November 2024), Northumbria University (April 2025), and EURECAT (June 2024) — each meeting the minimum attendance KPI of 25 participants and each tailored to its host institution's thematic expertise and audience profile. The first annual educational conference, Breaking Down the Barriers Toward a Circular Automotive Industry, was held on 27 November 2025 at EURECAT's facilities in Cerdanyola, Spain. With 98 total participants drawn from OEMs, Tier-1 suppliers, research organisations, universities, and consultancies across Europe, the event substantially exceeded its attendance target. Post-event satisfaction survey results — with an overall average score of 4.29 out of 5 across ten evaluation dimensions — confirmed strong participant endorsement. The second annual conference, CIRMA 2026 (Circular Materials and Mobility Conference: From Innovation to Implementation), is planned for 24–25 November 2026 at the Gläserne Manufaktur in Dresden, with proceedings to be published by Springer Nature. A third and final conference, co-located with the ZEvRA project's closing Final Exhibition, is planned for the project's final quarter.

The ZEvRA Zero-Emission Solutions Series — a programme of expert-led knowledge transfer webinars covering each of the project's material use cases — is now underway. Session 1 (The Circular EV: Designing Today for Tomorrow's Mobility, delivered by EURECAT) took place on 29 April 2026 with 19 live participants, and the recording is available on the ZEvRA Academy. Sessions B2 through B8 are scheduled across June to September 2026, covering secondary

aluminium, aluminium foam, steel, digital product passports, Industry 4.0, regulatory compliance, and thermoplastic composites. Short video nuggets, led by RKW Sachsen under the technology transfer strand of Task 5.2.2, are currently in production.

The content and priorities of ZEvRA's training activities have been directly informed by evidence gathered from value-chain practitioners. A structured diagnostic workshop conducted with consortium members — using live interactive polling to map the barriers preventing circular automotive solutions from reaching the market — identified cost competitiveness, regulatory uncertainty, and quality and traceability of recycled materials as the dominant challenges. These findings directly shaped the training portfolio: they validated the development of a dedicated course on recycled material quality and traceability (A5), confirmed the prominence of regulatory content across multiple courses, and reinforced the conference strategy of convening cross-sector stakeholders around shared implementation challenges.

Against the project's key performance indicators, the training programme is tracking well in several areas. Six certificate-backed courses are live; the total participants figure exceeds 150 when conference and workshop attendance is included alongside platform enrolments; and the quality threshold of 3.8/5 has been met with substantial margin in the first conference. The most outstanding risk is the virtual sessions KPI, which requires at least three sessions with more than 25 live attendees — a threshold was met for one session A1. Sessions A2 and A3 represent the immediate opportunities to address this and we are confident that we will meet the KPI. Detailed KPI monitoring and final evaluation will be reported in D5.6 (Training Implementation and Evaluation, due M33) and D5.4.

This deliverable directly contributes to ZEvRA Objective 5 — to strengthen human capital in research and innovation by developing skills in the Design for Circularity methodology, circular EV technologies, and digital manufacturing — and is structured to provide the Project Officer with full documentary evidence of all training activities completed to date, together with clear visibility of the activities still in progress. Section 2 sets out the scope, methodology, and objectives of WP5's training approach; Section 3 documents the full training materials portfolio; Section 4 covers workshops and conferences; Section 5 provides an integrated KPI monitoring dashboard; and Section 6 reflects on achievements and the project's training legacy.

6	2,156	60	98	4.29/5	3/3
Live courses on ZEvRA Academy	Total platform visits	Course enrolments	Conference 1 attendees	Satisfaction score	Workshops delivered
<i>A1–A6 complete</i>	<i>since Feb 2026</i>	<i>across 6 live courses</i>	<i>27 Nov 2025, Cerdanyola</i>	<i>Conference 1 overall avg</i>	<i>KPI complete ✓</i>

1 Introduction

1.1 ZEvRA and the Challenge of Circular Electric Vehicles

ZEvRA — Zero Emission electric Vehicles enabled by haRmonised circularity — is a Horizon Europe and UKRI co-funded research and innovation project running from January 2024 to December 2026 (Grant Agreement Nos. 101138034 and 10105316). Its central objective is to improve the circularity of light-duty electric vehicles across their entire value chain, from materials supply and manufacturing through to end-of-life recovery, in alignment with the European Union's target of zero net CO₂ equivalent emissions from new vehicles by 2035.

The challenge ZEvRA addresses is systemic. Achieving genuine circularity in the EV sector requires more than technical innovation in individual materials or processes — it demands a coordinated transformation across the full value chain, encompassing design philosophy, manufacturing practice, regulatory compliance, supply chain management, and end-of-life infrastructure. ZEvRA's response to this challenge is equally systemic: the project develops a Design for Circularity (DfC) methodology and a Harmonised Circularity Assessment (HCA) tool, validated through zero-emission solutions for eight key automotive materials covering over 84% of the relevant material mix — steel, wrought and cast aluminium, aluminium foam, thermoplastic composites, short-fibre plastics, glass, tyres, and rare earth elements. These technical outputs are supported by digital tools for manufacturing, circularity assessment, traceability, and virtual integration, and are anchored in the real-world ambition to improve zero-emission approaches across at least 59% of European EVs by 2035 through the five OEMs and Tier-1 suppliers that are part of the ZEvRA consortium.

1.2 WP 5 and the Training Mandate

ZEvRA's training and upskilling programme is developed and delivered through WP 5, structured around three tasks. Task 5.2.1 covers the development and maintenance of the ZEvRA Academy — the project's multilingual Moodle-based educational platform, hosted by EURECAT. Task 5.2.2, led by Northumbria University (UNN), covers the development of educational concepts and training materials for specific groups, encompassing original courses, webinars, workshops, and annual conferences. Task 5.2.3, led by RKW Sachsen, covers implementation, evaluation, and SME-focused capacity building activities. The present deliverable, D5.5 (Full Training Packages), is the primary output of Task 5.2.2 at M30.

The training mandate within ZEvRA is directly linked to ZEvRA's objective 5: to strengthen human capital in research and innovation by developing skills in the DfC methodology, circular EV technologies, large-scale prototyping, and digital manufacturing. This objective recognises that even the most technically sophisticated circular solutions will fail to achieve impact if the workforce and research community lack the knowledge and skills to adopt, adapt, and advance them. The training programme therefore occupies a strategic position within the project — not as

a peripheral activity but as the mechanism through which ZEvRA's scientific and industrial outputs are translated into durable human capability.

1.3 Purpose and Structure of this Deliverable

Deliverable D5.5 presents the full training package produced within ZEvRA's Task 5.2.2 at M30. It is both a documentation record and an evidence base: it demonstrates that the training activities planned under the GA have been executed in accordance with the project's commitments, and it provides the detailed material that will underpin the impact evaluation reported in D5.6 (M33).

The deliverable covers four categories of training activity. First, the ZEvRA Academy's course portfolio — six live original courses, one in production, one planned, and two supporting resources from allied projects — together with a full account of the platform's development and enhancements. Second, the ZEvRA Zero-Emission Solutions Series — a programme of expert-led webinars covering each of the project's material use cases, with one session completed and seven further sessions scheduled through September 2026. Third, the in-house workshop programme — three events delivered by Fraunhofer IWU, UNN, and EURECAT respectively, each focused on a different aspect of ZEvRA's research agenda and each meeting the project's attendance and quality KPIs. Fourth, the annual educational conference series — one conference delivered and two planned, forming a deliberate arc from stakeholder engagement through scientific consolidation to project legacy.

Each activity is documented with sufficient detail to allow the PO to assess both what was delivered and how it connects to ZEvRA's broader objectives. Where activities remain in progress, the status, timeline, and any associated risks are clearly flagged. Outstanding data requests — principally platform analytics and the updated activities — are identified explicitly, with a commitment to include confirmed figures in D5.6 and D5.4.

2 Scope and Objectives of Training Activities

The training activities developed within WP5 aim to enhance awareness, acceptability, and practical implementation of circular economy principles across the automotive value chains. The package supports the development of a robust educational ecosystem that combines academic knowledge, industrial practices, and digital learning infrastructure, designed to promote innovation in circular economy technologies, strengthen workforce skills, and establish long-term collaboration between academia and industry partners across Europe.

The WP5 training structure is organised through three complementary and interdependent stages. First, EUT and UNN develop the multilingual ZEvRA Academy educational platform under Task 5.2.1, providing access to digital training resources, webinars, repositories, and blended learning tools. Second, UNN, NTNU, UBO, RKW, FRA, and EUT jointly develop educational concepts and materials under Task 5.2.2, covering topics including Circular Economy, Life Cycle Assessment and Circular Economy, Quality, Traceability and Standardisation of Recycled Materials, Design for Circularity, Lightweight Design by Recycling-based Aluminium Foam, Industry 4.0 Digital Enablers for Circular Automotive Value Chains, and Eco-Design. Third, the developed training activities are implemented and evaluated under Task 5.2.3 by RKW and partners through workshops, webinars, learning nuggets, capacity building activities, and SME-focused pilot training.

The development of training content within WP5 has followed a deliberate, expertise-driven approach. Rather than commissioning materials from a central point, each course has been assigned to the consortium partner with the deepest scientific, technical, and industrial knowledge of the relevant topic. This ensures that training content reflects state-of-the-art project outputs and genuine practitioner insight, rather than generalised secondary material. UNN, as Task 5.2.2 lead, has coordinated this distributed development process — establishing a shared content framework, agreeing on common learning architecture, and managing delivery timelines in line with the project's overall risk management plan. The result is a cohesive portfolio in which each module, while developed by a different partner, connects to a shared set of project themes and learning goals.

Pedagogically, courses have been structured in modular formats and implemented through the Moodle-based ZEvRA Academy platform, enabling flexible access, progressive learning, and scalability. This facilitates both self-paced and guided learning experiences, while maintaining consistency across courses in terms of structure, learning outcomes, and usability. This approach maximises accessibility, engagement, and practical applicability for learners from academia, industry, and policy-making contexts. In addition to the formal course portfolio, knowledge transfer is supported through complementary formats — live webinars, in-house workshops, annual conferences, and short video nuggets — ensuring that ZEvRA's outputs reach diverse audiences across different professional and geographic contexts.

2.1 Target Groups

The training activities have been designed to address the needs of a wide range of stakeholders involved in the circular economy and sustainable mobility sectors. The selection of target groups reflects both the breadth of ZEvRA's research agenda and the practical imperative of ensuring that circular economy knowledge reaches the people best positioned to apply it — from early-career researchers to senior engineers, from SME practitioners to policymakers.

The primary target groups are:

- Undergraduate, MSc, and PhD students at partner universities, including UNN, NTNU, and UBO, who are developing the foundational and advanced knowledge required for careers in sustainable engineering, circular design, and advanced manufacturing.
- Academic researchers and early career scientists working in circular economy, advanced materials, digital manufacturing, and sustainable engineering, for whom the courses provide structured access to ZEvRA's methodologies and use cases.
- Industrial workforce and technical staff from SMEs and large organisations involved in automotive manufacturing, battery recycling, and sustainable production, who benefit from practical, application-oriented content that can be directly transferred to professional practice.
- Industrial managers, innovation officers, and decision makers seeking upskilling opportunities in circular economy strategy, regulatory compliance, and implementation pathways.
- Technology developers and engineers working on Industry 4.0, digital twin technologies, eco-design, and life cycle assessment, for whom the advanced-level courses provide targeted technical depth.
- Broader stakeholders from academia and industry who engage with ZEvRA's knowledge through workshops, conferences, webinars, and networking activities organised across the project.

The selection of training topics and the assignment of course development to specific partner experts has been informed by the strategic priorities, technical domains, and expected impacts of the ZEvRA project — in particular its focus on circularity across the full electric vehicle value chain and on fostering upskilling and reskilling in key enabling areas.

To ensure that the training content developed within WP5 was grounded in real-world practitioner needs rather than purely academic priorities, a structured diagnostic workshop was conducted with consortium members under Task 5.2.2 and UNN lead, titled ***Turning Circular Automotive Concepts into Reality: Your Position within the Automotive Value Chain***. The session brought together representatives from across the full automotive value chain — OEMs (ŠKODA, Toyota, Volkswagen), Tier-1 and Tier-2 suppliers, materials producers, researchers, consultants, and business actors — and used live interactive polling (Mentimeter) to surface the

barriers preventing circular automotive solutions from reaching the market. Across 43 participants, cost competitiveness and regulatory uncertainty emerged as the dominant barriers, followed by quality and traceability of recycled materials, feedstock availability, and OEM acceptance. The leading systemic risk identified was the absence of OEM uptake, cited by nearly a third of respondents, with participants reaching a strong consensus that addressing these barriers requires a combination of policy dialogue, cross-actor workshops, and dedicated training and capacity building. These findings directly informed the structure and thematic priorities of ZEvRA's training portfolio: they validated the development of a dedicated course on Quality, Traceability and Standardisation of Recycled Materials (A5), confirmed the prominence of regulatory and policy content woven throughout the Circular Economy (A1), LCA (A2), and Design for Circularity (A3) courses, and reinforced the design rationale for the multi-stakeholder conference format adopted in the next conferences CIRMA 2026 and the final conference.

2.2 Short- and Long-Term Objectives

The training activities developed under ZEvRA are structured to address both immediate project needs and longer-term knowledge consolidation and reuse. The short- and long-term objectives reflect the project's dual ambition: to deliver impactful, targeted training within the project lifetime, and to establish a sustainable educational infrastructure that continues to generate value beyond it.

2.2.1 Short-term objectives

In the short term, the primary objective is to design, develop, and deliver a coherent set of training materials tailored to the main ZEvRA target groups and project partners. This includes:

- The development of at least ten original training courses aligned with ZEvRA's technical domains and use cases, structured to be directly applicable in both academic and industrial contexts.
- The delivery of live and interactive knowledge transfer activities — including in-house workshops, annual educational conferences, and a dedicated webinar series — ensuring that ZEvRA's outputs reach audiences through multiple channels and formats.
- The publication of training materials on the ZEvRA Academy platform with open access, consistent course architecture, and completion certificates.
- The production of short video nuggets to convey focused technical and methodological insights to industry professionals and other time-constrained audiences, maximising ZEvRA's knowledge transfer reach beyond the formal course audience.

2.2.2 Long-term objectives

In the long term, the focus shifts towards sustainability, accessibility, and scalability of the training ecosystem:

- Training materials will remain accessible through the ZEvRA Academy for at least two years after project completion, enabling future cohorts of students, researchers, and professionals to benefit from the educational resources generated.
- The platform supports mobile access and autonomous self-paced learning, ensuring continued engagement without the need for facilitation or project team involvement.
- Selected materials are being progressively translated beyond the English primary version to extend reach across different regions and stakeholder communities.
- The modular structure of courses and the platform's architecture support future expansion in topics and formats, positioning the ZEvRA Academy as a long-term reference resource for circular automotive education.
- The knowledge and skills developed through ZEvRA's training programme are intended to directly underpin uptake of the project's outputs — the Design for Circularity methodology, the Harmonised Circularity Assessment tool, and the material-specific zero-emission solutions — contributing to ZEvRA's ambition of improving circular approaches across at least 59% of European EVs by 2035.

The impact of the training activities will be formally assessed in Deliverable D5.6 (Training Implementation and Evaluation, due M33), which will report on measured outcomes across all target groups. The current deliverable provides the full training package — content, delivery records, and activity documentation — as the evidential basis for that evaluation.

3 Training Topics — Content Overview

The training portfolio developed within WP5 combines academic and industrial perspectives on circularity, sustainable materials, recycling technologies, life cycle assessment, traceability, standardisation, and circular product design. All courses are delivered through the ZEvRA Academy — a Moodle-based online platform hosted by EUT — and are designed to support students, researchers, industry professionals, and other stakeholders involved in the transition towards circular and sustainable electric vehicle value chains. The portfolio is organised into four categories that reflect both the origin of the content and its intended mode of use.

3.1 Training Materials overview

The table below provides an at-a-glance summary of all training materials on the platform. Full course records follow in the sections below. We have 4 categories for our materials:

1. Cat. A — ZEvRA-Developed Courses: original content designed, authored, and quality-reviewed within the ZEvRA consortium, covering the project's core technical and methodological topics.
2. Cat. B — Recorded Webinars: expert-led knowledge transfer sessions from the ZEvRA Zero-Emission Solutions Series, available on the platform as standalone learning resources following live delivery.
3. Cat. C — Video Nuggets: short, self-contained video resources led by RKW Sachsen under the technology transfer strand of Task 5.2.2, designed for rapid knowledge uptake by time-constrained industry audiences.
4. Cat. D — Supporting Training Materials from Allied Projects: resources from related EU-funded initiatives, curated and uploaded to broaden the platform offer with complementary cross-sector perspectives.

The table below consolidates all materials by category, format, level, publication date, and current enrolment figures as of 15 June 2026. All participants count reflect the number of individuals who have enrolled on the ZEvRA Academy platform to that date. Webinar participant figures refer to live session attendance; post-event replay analytics are pending confirmation from the platform provider and will be reported in D5.6 and 5.4.

Table 2: Training Materials status as evaluated on the 15th of June 2026.

Cat.	Title	Lead	Format	Level	Status	Publication date	Participants (15/06/2026)
A1	Circular Economy	UNN	Online course (4 modules)	Beginner	✓ Live	21/01/2025	25
A2	LCA and circular economy	NTNU	Online course (3 modules)	Intermediate	✓ Live	16/01/2026	13

A3	Lightweight Design by recycling-based Aluminum Foam	FRA	Online course (5 modules)	Advanced	✓ Live	24/01/2026	11
A4	Design for Circularity	EUT	Online course (4 modules)	Beginner	✓ Live	18/04/2026	2
A5	Quality, Traceability & Standardisation of Recycled Materials	UNN	Online course	Intermediate	✓ Live	07/05/2026	8
A6	Secondary Aluminum Alloys for High-Pressure Die Casting (HPDC)	UBO / EUT / END	Online course (3 modules)	Advanced	✓ Live	08/06/2026	1
A7	Industry 4.0 Digital Enablers for Circular Automotive Value Chains	NTNU	Online masterclass (6 modules)	Advanced	⌚ In production	TBC	—
A8	Eco-Design	UNN	Online course	Advanced	⦿ Planned	TBC	—
B1	Zero-Emission Solutions Series — Session 1: The Circular EV: Designing Today for Tomorrow's Mobility	EUT	Recorded webinar	Foundation-Intermediate	✓ Live	29/04/2026	19
B2	Zero-Emission Solutions Series — Session 2: Secondary Aluminium Alloys for HPDC	UNIBO	Live webinar + recording	Advanced	Upcoming	17/06/2026	TBC
B3	Zero-Emission Solutions Series — Session 3: From Scrap to Value — Secondary High-Performance Metal Foam	FRA	Live webinar + recording	Advanced	Upcoming	24/06/2026	TBC
B4	Zero-Emission Solutions Series — Session 4: Zero-Emission Solutions for Steel	FRA	Live webinar + recording	Intermediate	Planned	08/07/2026	TBC
B5	Zero-Emission Solutions Series — Session 5: Digital Product Passport	POLIMI	Live webinar + recording	Intermediate	Planned	15/07/2026	TBC
B6	Zero-Emission Solutions Series — Session 6: Industry 4.0 Capabilities for Zero-Emission Solutions	NTNU	Live webinar + recording	Intermediate	Planned	22/07/2026	TBC
B7	Zero-Emission Solutions Series — Session 7: Regulatory Landscape & Compliance for Circular Vehicles	VTT	Live webinar + recording	Foundation-Intermediate	Planned	02/09/2026	TBC
B8	Zero-Emission Solutions Series — Session 8: Thermoplastics Composites	Compositec (Faurecia)	Live webinar + recording	Advanced	Planned	16/09/2026	TBC
C1-6	Video Nuggets — Technology Transfer Series	RKW	Short video (3-10 min)	Introductory	⌚ In production	TBC	—
D1	Biomass Circularity & Waste Recycling	RTL (external)	Online course	Beginner	✓ Live	—	2
D2	Material Upcycling	RTL (external)	Online course	Beginner	✓ Live	—	1

The ZEvRA training environment is still under active development at the point of this submission. Courses A7, A8-9 are in production and planned phases respectively, and further modules,

additional languages, and updated content are being progressively integrated. The table above should therefore be understood as a snapshot of the platform's current state rather than a definitive final register.

3.2 Platform Updates

The ZEvRA Academy platform has undergone a series of significant enhancements since its initial launch, driven by user feedback, partner input, and the evolving needs of the training programme. The updates described below reflect a progressive shift from a basic functional platform to a mature, learner-centred educational environment. Each update has been implemented by EUT under Task 5.2.1 and is already live on the platform at the time of this submission.

3.2.1 Access and Navigation

The platform's landing page has been redesigned to provide a more structured and content-oriented entry point. The initial version was limited to registration and login functions; the updated interface now features direct access to the ZEvRA Zero-Emission Solutions Series and to the project website, reducing the number of navigation steps required to reach key resources. This change significantly improves first-time user experience and increases the visibility of flagship training content from the moment of entry.



Figure 2: Platform Navigation Page

3.2.2 Thematic content organisation

Course content has been reorganised from a format-based structure to a thematic one, grouping materials into three sections: Automotive Circular Strategies, Automotive Circular Materials, and Wider Circular Strategies. This change reflects how learners actually navigate — by topic and interest rather than by content type — and makes it easier to identify relevant material and understand how different courses connect. The Wider Circular Strategies section incorporates

materials from allied European projects (Category D), extending the platform's reach beyond ZEvRA-produced content.

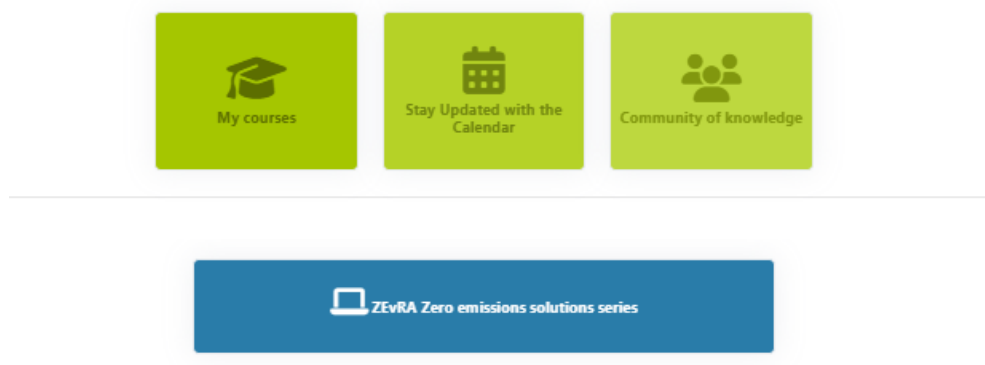


Figure 3: *Platform content Organisation*

At the same time, the *ZEvRA Zero Emissions Solutions Series* has been more clearly integrated into the platform as a visible and accessible entry point. Users can join these sessions live through open registration or directly access the recordings from the platform, without barriers. This makes it easier to connect ongoing knowledge-transfer activities with the learning experience and ensures that key insights remain available beyond the live events.

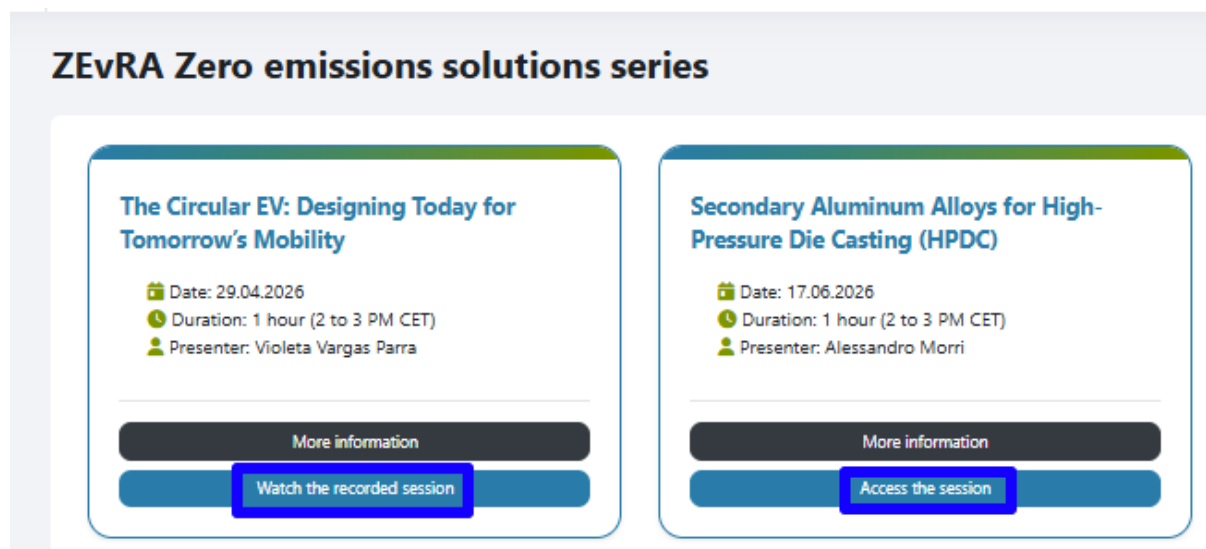


Figure 4: *Webinar series landing page.*

3.2.3 AI Course Tutor

An interactive AI Course Tutor has been integrated into each course, providing learners with a conversational support layer alongside the structured content. Users can ask questions, seek clarification on complex topics, and receive guidance in real time as they progress through a module. This feature does not replace the course content but complements it, making the learning experience more responsive and accessible — particularly for learners engaging with technically advanced material without access to an instructor.

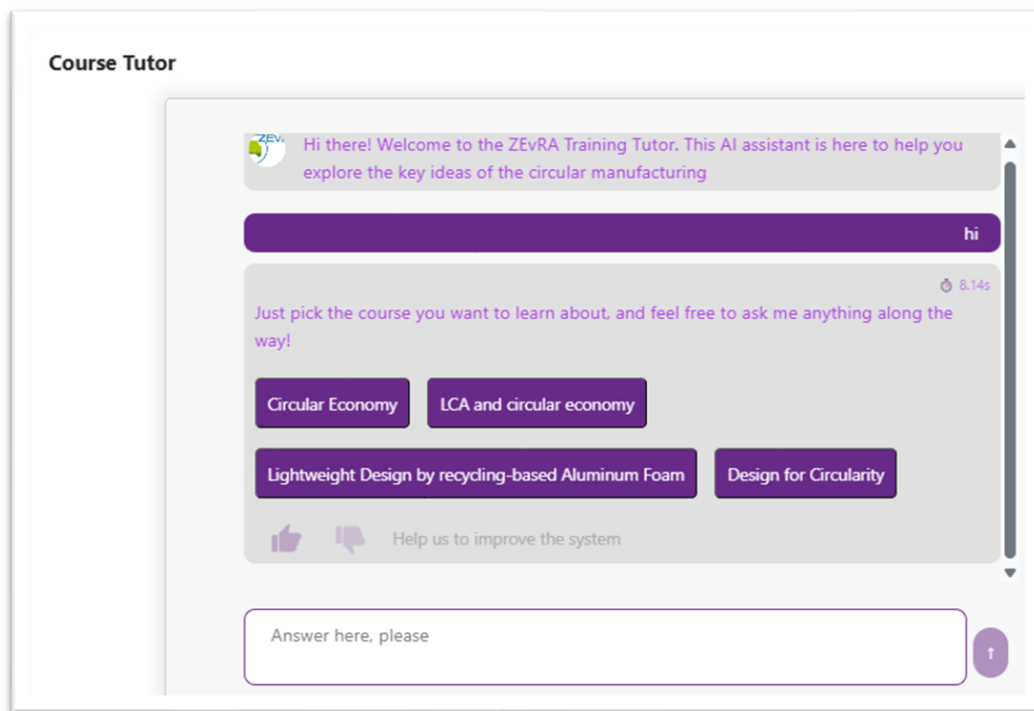


Figure 5: Print screen of the course Tutor available on the platform

3.2.4 Pre- and post-course assessment

A short diagnostic assessment has been added at the beginning of each course to capture learners' prior knowledge and direct them towards the most appropriate level of engagement. A parallel assessment at the end of the course enables comparison of knowledge before and after completion, providing both learners and course authors with a lightweight but meaningful measure of learning gain. This feature supports the evaluation activities planned under D5.6.

3.2.5 Digital certificates

Learners who complete a course and pass the final assessment are automatically awarded a personalised digital certificate, issued under the ZEvRA Academy. Each certificate includes the course title, completion date, issuing institution, and a unique verification code with an external validation link. Six certificate-backed courses are currently live on the platform, with further courses to follow as A7 and A8-9 are published. The certificate system strengthens learner motivation and provides a tangible, verifiable record of achievement for use in professional and academic contexts.

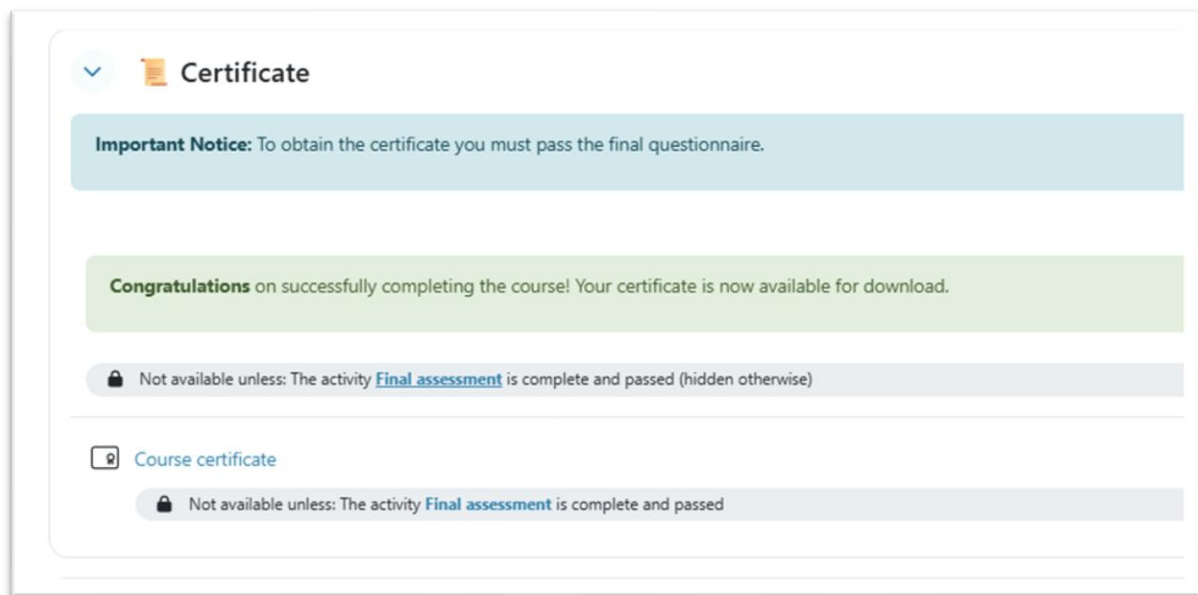


Figure 6: Certificate availability



Figure 7: An example of the obtained certification after course completion

3.2.6 Multilingual development

The platform interface is already navigable in multiple languages, including German, Spanish, French, Italian, Hungarian, Norwegian, Finnish, Swedish, and Turkish, in addition to the primary English version. Selected training materials are currently being translated, following a prioritisation approach that focuses first on the highest-impact content. This phased multilingual strategy supports the project's objective of reaching audiences across the European consortium and beyond, while maintaining quality and consistency in each language version.

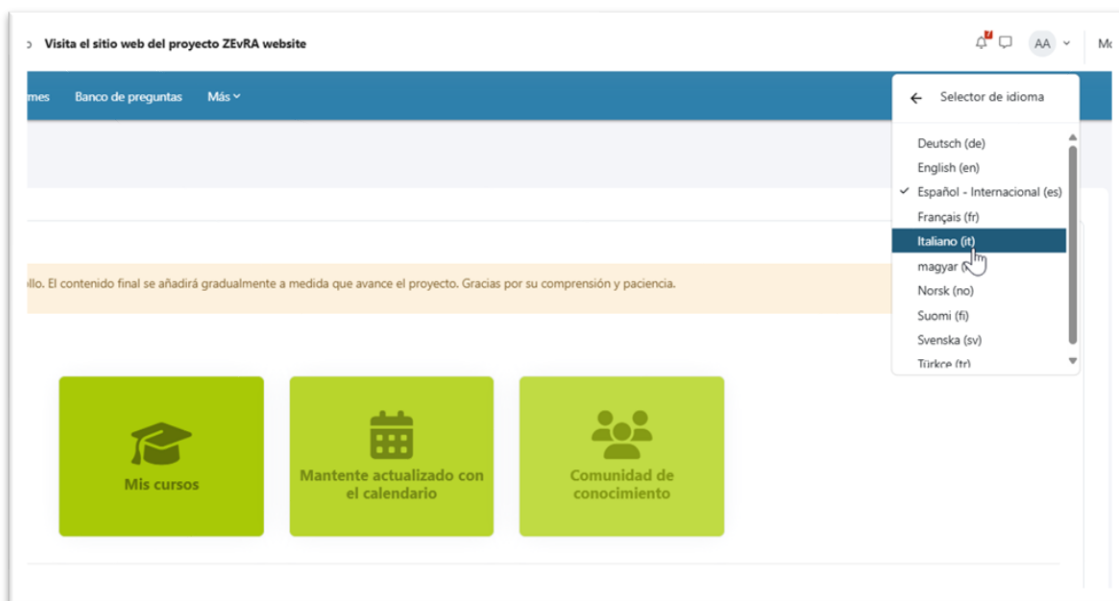


Figure 8: Multilingual Navigation option on the platform.

3.3 Category A- ZEvRA-Developed Training Courses

Category A comprises the original training courses designed, authored, and peer-reviewed within the ZEvRA consortium. Each course has been developed by the partner institution with the deepest technical expertise in the relevant topic area, ensuring that content is grounded in the project's own research outputs and use cases. All Category A courses are hosted on the ZEvRA Academy, follow a shared modular structure, and award a digital certificate upon completion.

Six courses are currently live on the platform (A1–A6). Course A7 is in the final stages of production with recording underway, and Course A8 - 9 is in the planning phase. Full course records — including metadata, learning outcomes, content overview, ZEvRA research linkage, and dissemination details — are provided in the subsections below.

3.3.1 A1 - Circular Economy (UNN)

3.3.1.1 Course Metadata

Table 3: Circular Economy Course Metadata

Course Title	Circular Economy
Lead Partner	Northumbria University (UNN)
Author(s)	Dr Jikai Zhang, Northumbria University
Topic Area	Circular Economy, Sustainability, Circular Business Models, Policy and Governance
Format	Self-paced online course (4 modules)
Level	Beginner

Target Audience	Students, researchers, industry professionals, policymakers, and sustainability practitioners
Duration	Approx. 3 hours
Platform Link	https://academy.zevraproject.eu/course/view.php?id=29
Date Published	21 January 2025
Enrolments (15/06/2026)	25
Certificate	Yes — ZEvRA Academy certificate awarded on completion
Dissemination link	https://zevraproject.eu/drive-sustainable-transformation-with-zevras-new-training-platform/

3.3.1.2 Course description

This course provides a comprehensive introduction to the principles, implementation, governance, and performance assessment of the Circular Economy (CE). Designed as an entry-level programme, it equips learners with the knowledge and practical tools required to support the transition from traditional linear economic models towards more sustainable and regenerative systems. Topics include circular economy frameworks, design principles, European policy and regulatory developments, and approaches for measuring environmental, economic, and social impacts. Through a combination of theoretical foundations, practical examples, and real-world case studies, learners develop a holistic understanding of how circular economy principles can be applied to improve resource efficiency, reduce environmental impacts, and support sustainable development.

3.3.1.3 Course content overview

The course is structured into four interconnected modules: (1) Introduction to the Circular Economy — fundamental concepts, global value chains, circular supply chains, and resource efficiency; (2) Circular Economy Frameworks, Theories, and Design Principles — the 9Rs Framework, Cradle-to-Cradle, Ellen MacArthur Foundation's Three Principles, circular design and systems thinking; (3) Policy, Implementation, and Collaboration — European Green Deal, Circular Economy Action Plan, ESPR, Batteries Regulation, Digital Product Passports, and stakeholder collaboration; (4) Measuring Impact, Continuous Improvement and Action Planning — LCA, S-LCA, LCC, Material Flow Analysis, PDCA, KPI development, and circular economy roadmaps.

3.3.1.4 Link to ZEvRA research

This course provides the foundational knowledge underpinning ZEvRA's Design for Circularity methodology and supports learners in understanding the resource efficiency, material recovery, and circular supply chain strategies that are central to the project's objectives across WP1–WP4.

3.3.1.5 Dissemination

Table 4: Circular Economy Course Dissemination (work with WP6)

Project announcement	website	https://zevraproject.eu/drive-sustainable-transformation-with-zevras-new-training-platform/
Date of announcement		23 March 2026

LinkedIn posts with dates	23 March 2026: https://www.linkedin.com/feed/update/urn:li:activity:7441887300453588992
LinkedIn engagement and impressions	Engagement rate: 22,9% Engagement: 90 Impressions: 393 Clicks: 67 Reactions: 21
ZEvRA Academy direct link	https://academy.zevraproject.eu/course/view.php?id=29
Access type	Open registration — publicly accessible via the ZEvRA Academy
Languages available	English (primary); platform supports DE, ES, FR, IT, HU, NO, FI, SV, TR
Dissemination level	PU — Public

3.3.2 A2- LCA and Circular Economy (NTNU)

3.3.2.1 Course Metadata

Table 5: LCA and Circular Economy Course Metadata

Course Title	LCA and Circular Economy
Lead Partner	Norwegian University of Science and Technology (NTNU)
Author(s)	Floriane Verceux, NTNU
Topic Area	Life Cycle Assessment (LCA), Circular Economy, Environmental Impact Assessment, Sustainability
Format	Self-paced online course with three progressive learning paths (3 modules)
Level	Intermediate
Target Audience	Engineers, product developers, sustainability professionals, researchers, and decision-makers
Duration	Approx. 3 hours
Platform Link	https://academy.zevraproject.eu/course/view.php?id=30
Date Published	16 January 2026
Enrolments (15/06/2026)	13
Certificate	Yes — ZEvRA Academy certificate awarded on completion

3.3.2.2 Course description

This course provides a comprehensive introduction to Life Cycle Assessment (LCA) and its application in the transition towards circular electric vehicles. A distinctive feature is its adaptive structure: following a general introduction and knowledge quiz, learners are directed to one of three tailored paths — LCA Explorer (foundational), LCA Practitioner (applied), or LCA Strategist (advanced) — based on their prior knowledge and learning objectives. The course situates LCA within the EU policy landscape and demonstrates its role in assessing and improving the environmental performance of products and value chains.

3.3.2.3 Course content overview

The course opens with an introduction to LCA fundamentals and terminology, followed by Module 1 (LCA Explorer) covering carbon footprint concepts applied to everyday and EV scenarios; Module 2 (LCA Practitioner) covering ISO 14040/14044 standards, data collection methodology,

key software tools (OpenLCA, SimaPro, GaBi, Brightway), and a worked ZEvRA case study; and Module 3 (LCA Strategist) covering attributional vs. consequential LCA, end-of-life modelling, uncertainty and sensitivity analysis, and strategic decision support..

3.3.2.4 Link to ZEvRA research

LCA is the central methodology used within ZEvRA to quantify carbon footprint reductions enabled by circular materials across the EV value chain. The course is anchored in ZEvRA-specific examples — including functional unit definition for virgin vs. recycled material comparison, end-of-life modelling for automotive components, and trade-off interpretation.

3.3.2.5 Dissemination

Table 6: *LCA and Circular Economy Course Dissemination (work with WP6)*

Project website announcement	https://zevraproject.eu/lca-and-circular-economy-course-on-zevra-training-platform/
Date of announcement	16 March 2026
LinkedIn posts with dates	16 March 2026: https://www.linkedin.com/feed/update/urn:li:activity:7439319017963610112
LinkedIn engagement and impressions	Engagement rate: 19,72% Engagement: 182 Impressions: 923 Clicks: 143 Reactions: 35
ZEvRA Academy direct link	https://academy.zevraproject.eu/enrol/index.php?id=30
Access type	Open registration — publicly accessible via the ZEvRA Academy
Languages available	English (primary); platform supports DE, ES, FR, IT, HU, NO, FI, SV, TR
Dissemination level	PU — Public

3.3.3 A3 - Lightweight Design by Recycling-based Aluminium Foam (FRA)

3.3.3.1 Course Metadata

Table 7: *Lightweight Design by Recycling-based Aluminium Foam Course Metadata*

Course Title	Lightweight Design by Recycling-based Aluminium Foam
Lead Partner	Fraunhofer IWU (FRA)
Author(s)	Dr Christian Hannemann, Fraunhofer IWU
Topic Area	Lightweight Design, Circular Materials, Advanced Manufacturing, Sustainable Mobility
Format	Self-paced online course (5 modules)
Level	Advanced
Target Audience	Engineers, designers, manufacturers, researchers in automotive, materials, and mobility sectors
Duration	Approx. 2 hours
Platform Link	https://academy.zevraproject.eu/course/view.php?id=31
Date Published	24 January 2026
Enrolments (15/06/2026)	11
Certificate	Yes — ZEvRA Academy certificate awarded on completion

3.3.3.2 Course description.

This course introduces lightweight design through the use of recycling-based aluminium foam, focusing on its role in circular and low-emission mobility solutions. It covers lightweight design principles, foam typologies, production routes, material properties, and potential industrial applications, with specific attention to how recycled aluminium can support circular economy strategies and material recovery.

3.3.3.3 Course content.

Module 1: Introduction to lightweight design and metal foams; Module 2: Production and properties of aluminium foam (open- and closed-cell structures, density, strength, energy absorption); Module 3: Industrial applications across automotive, transport, and engineering sectors; Module 4: Recycling, upcycling, and circularity — material recovery and resource efficiency; Module 5: Advanced concepts and future applications, including open-cell structures and emerging research directions.

3.3.3.4 Link to ZEvRA research.

This course is directly based on the aluminium foam use case developed within ZEvRA, specifically the work on secondary high-performance metal foam for improved crash safety (WP2/WP4). Dr Hannemann is the principal researcher responsible for this use case within the consortium.

3.3.3.5 Dissemination.

Table 8: *Lightweight Design by Recycling-based Aluminium Foam Course Dissemination (work with WP6)*

Project website announcement	On the project website linked to youtube: https://www.youtube.com/watch?v=TbH7SU1ZPb4
Date of announcement	07 April 2026
LinkedIn posts with dates	07 April 2026: https://www.linkedin.com/feed/update/urn:li:activity:7447349179221348352/?utm_source=share&utm_medium=member_desktop&rcm=ACoAADCq3X0BdPI4gsyhhj9WkNWZaedrGv6Iawo
LinkedIn engagement and impressions	Engagement rate: 10,07% Engagement: 57 Impressions: 566 Clicks: 29 Reactions: 24
ZEvRA Academy direct link	https://academy.zevraproject.eu/course/index.php?categoryid=9
Access type	Open registration — publicly accessible via the ZEvRA Academy
Languages available	English (primary); platform supports DE, ES, FR, IT, HU, NO, FI, SV, TR
Dissemination level	PU — Public

3.3.4 A4 — Design for Circularity (EUT)

3.3.4.1 Course Metadata

Table 9: *Design for Circularity course Metadata*

Course Title	Design for Circularity
Lead Partner	EURECAT (EUT)
Author(s)	M. Violeta Vargas-P., EURECAT
Topic Area	Design for Circularity, Circular Economy, Product Development, Sustainability
Format	Self-paced online course (4 modules)
Level	Beginner
Target Audience	Engineers, designers, manufacturers, researchers, and decision-makers in product development
Duration	Approx. 1.5 hours
Platform Link	https://academy.zevraproject.eu/course/view.php?id=32
Date Published	18 April 2026
Enrolments (15/06/2026)	2
Certificate	Yes — ZEvRA Academy certificate awarded on completion

3.3.4.2 Course description.

This course introduces Design for Circularity (DfC) as a practical approach to integrating circular economy principles into product development. It explains why design decisions are critical for improving durability, repairability, reuse, remanufacturing, and recycling potential across the product life cycle, and presents a step-by-step DfC methodology applicable to automotive and other engineering contexts.

3.3.4.3 Course content.

Module 1: Introduction to DfC — why design decisions determine circular performance; Module 2: Foundations — life-cycle thinking, trade-offs, and going beyond recycling; Module 3: Methodology — identifying hotspots, selecting strategies, defining design actions using a practical iterative approach; Module 4: EU Policy Context — key European policy drivers shaping circular product design requirements (ESPR, Batteries Regulation, Ecodesign).

3.3.4.4 Link to ZEvRA research.

This course is authored by the EUT team leading WP1 of ZEvRA, which is responsible for the project's Design for Circularity methodology. The course operationalises the DfC framework developed within the project and provides learners with direct access to the methodological approach that underpins ZEvRA's holistic circularity assessment.

3.3.4.5 Dissemination.

Table 10: Design for Circularity Course Dissemination (work with WP6)

Project announcement	website	https://zevraproject.eu/the-circular-ev-designing-today-for-tomorrows-mobility-webinar/
Date of announcement		29 April 2026
LinkedIn posts with dates		13 April 2026: https://www.linkedin.com/feed/update/urn:li:activity:7449449714724278272 20 April 2026: https://www.linkedin.com/feed/update/urn:li:activity:7451994717082275840 27 April 2026: https://www.linkedin.com/feed/update/urn:li:activity:7454553275988799488
LinkedIn engagement and impressions		Engagement rate: 19,97% Engagement: 153 Impressions: 766 Clicks: 114 Reactions: 34
ZEvRA Academy direct link		https://academy.zevraproject.eu/enrol/index.php?id=32
Access type		Open registration — publicly accessible via the ZEvRA Academy
Languages available		English (primary); platform supports DE, ES, FR, IT, HU, NO, FI, SV, TR
Dissemination level		PU — Public

3.3.5 A5 — Quality, Traceability & Standardisation of Recycled Materials (UNN)

3.3.5.1 Course Metadata

Table 11: Quality, Traceability & Standardisation of Recycled Materials course metadata

Course Title	Quality, Traceability & Standardisation of Recycled Materials
Lead Partner	Northumbria University (UNN)
Author(s)	Dr Jikai Zhang, Northumbria University
Topic Area	Recycled Materials, Circular Economy, Standardisation and Regulation
Format	Self-paced online course
Level	Intermediate
Target Audience	Researchers, manufacturing engineers, sustainability professionals, industrial workforce, OEM and supply chain practitioners
Duration	Approx. 1.5 hours
Platform Link	https://academy.zevraproject.eu/course/view.php?id=33
Date Published	7 May 2026
Enrolments (15/06/2026)	8
Certificate	Yes — ZEvRA Academy certificate awarded on completion

3.3.5.2 Course description.

This course addresses one of the most consistent barriers identified by ZEvRA stakeholders: ensuring quality, traceability, and standardisation throughout the recycled material lifecycle. It introduces the role of recycled materials in supporting circular economy objectives, examines

technical challenges including material variability, contamination, consistency, and performance requirements, and presents traceability systems and digital tracking technologies — including QR codes, RFID, blockchain platforms, and Digital Product Passports. Learners are introduced to relevant international standards, certification schemes, and regulatory frameworks, supported by industrial case studies covering recycled aluminium, digital battery passports, and aircraft dismantling.

3.3.5.3 Course content.

The course is structured around three interconnected themes: (1) Quality of Recycled Materials — variability, contamination, purity, mechanical properties, and quality assurance in automotive and battery applications; (2) Traceability and Digital Tracking Systems — QR codes, RFID, blockchain, data integration, Digital Product Passports, and regulatory compliance; (3) Standardisation, Regulation, and Industrial Applications — ISO standards, quality management systems, EU Battery Regulation, Digital Battery Passport, and industrial case studies. The course concludes with an overview of emerging developments in recycled material management.

3.3.5.4 Link to ZEvRA research.

This course is directly informed by ZEvRA's outputs on secondary aluminium and simulation models for recycled materials (WP2), the circular car concept and Design for Circularity methodology (WP3), and regulatory framework work on the Digital Battery Passport. It translates ZEvRA's research directly into practical knowledge for the industrial workforce.

3.3.5.5 Dissemination.

Table 12: *Quality, Traceability & Standardisation of Recycled Materials Course Dissemination (work with WP6)*

Project announcement	website	https://zevraproject.eu/new-course-available-in-the-zevra-academy/
Date of announcement		22 May 2026
LinkedIn posts with dates		22 May 2026: https://www.linkedin.com/feed/update/urn:li:activity:7463526822555570176/
LinkedIn engagement and impressions		Engagement rate: 13,14% Engagement: 49 Impressions: 373 Clicks: 24 Reactions: 21
ZEvRA Academy direct link		https://academy.zevraproject.eu/course/view.php?id=33
Access type		Open registration — publicly accessible via the ZEvRA Academy
Languages available		English (primary); platform supports DE, ES, FR, IT, HU, NO, FI, SV, TR
Dissemination level		PU — Public

3.3.6 A6 — Secondary Aluminium Alloys for High-Pressure Die Casting (UBO / EUT / END)

3.3.6.1 Course Metadata

Table 13: Secondary Aluminium Alloys for High-Pressure Die Casting (HPDC) course metadata.

Course Title	Secondary Aluminium Alloys for High-Pressure Die Casting (HPDC)
Lead Partner	University of Bologna (UBO)
Author(s)	Manel da Silva López (EUT); Prof. Alessandro Morri (UBO); Claudio Mus (ENDURANCE)
Topic Area	Secondary Aluminium Alloys, High-Pressure Die Casting, Circular Manufacturing, Automotive Components
Format	Self-paced online course (3 modules)
Level	Advanced
Target Audience	Engineers, materials specialists, manufacturers, and researchers in die casting and alloy development
Duration	Approx. 2 hours
Platform Link	https://academy.zevraproject.eu/course/view.php?id=34
Date Published	8 June 2026
Enrolments (15/06/2026)	1
Certificate	Yes — ZEvRA Academy certificate awarded on completion

3.3.6.2 Course description.

This course provides a comprehensive overview of secondary aluminium alloys in High-Pressure Die Casting (HPDC) for automotive applications, covering the complete process–structure–property relationship. Special attention is given to the challenges associated with recycled aluminium alloys, including the influence of alloying elements, impurities, porosity, intermetallic compounds, and heat-treatment limitations. Industrial case studies illustrate the implementation of secondary aluminium alloys in structural automotive components.

3.3.6.3 Course content.

Module 1 (EURECAT): Introduction to HPDC technology, process phases, alloy requirements, alloying elements, impurities, and castability assessment. Module 2 (UBO): HPDC microstructures, externally solidified crystals, Fe-rich intermetallic compounds, casting defects, and heat treatments (T4, T5, T6, T7) with HPDC-specific limitations. Module 3 (ENDURANCE): Industrial implementation of primary and secondary alloys in automotive components, mechanical testing methodologies, and case studies including battery housing and structural bracket applications.

3.3.6.4 Link to ZEvRA research.

This course is directly based on WP2 and WP4 activities in ZEvRA, integrating knowledge generated during the development of secondary aluminium alloys, HPDC process optimisation,

microstructure characterisation, and industrial demonstrator validation. The case studies are derived from real automotive applications developed within the project.

3.3.6.5 Dissemination.

Table 14: *Secondary Aluminium Alloys for High-Pressure Die Casting (HPDC) course Dissemination (work with WP6)*

Project website announcement	https://zevraproject.eu/new-webinar-series-secondary-aluminum-alloys-for-high-pressure-die-casting/
Date of announcement	03 June 2026
LinkedIn posts with dates	28 May 2026: https://www.linkedin.com/feed/update/urn:li:activity:7465781500639072256
LinkedIn engagement and impressions	Engagement rate: 10,58% Engagement: 67 Impressions: 633 Clicks: 34 Reactions: 28
ZEvRA Academy direct link	https://academy.zevraproject.eu/course/view.php?id=34
Access type	Open registration — publicly accessible via the ZEvRA Academy
Languages available	English (primary); platform supports DE, ES, FR, IT, HU, NO, FI, SV, TR
Dissemination level	PU — Public

3.3.7 A7 — Industry 4.0 Digital Enablers for Circular Automotive Value Chains (NTNU) - In Production

Table 15: *Industry 4.0 Digital Enablers for Circular Automotive Value Chains course metadata.*

Course Title	Industry 4.0 Digital Enablers for Circular Automotive Value Chains
Lead Partner	Norwegian University of Science and Technology (NTNU) & Benteler (BAR)
Author(s)	Professor Davar Hemyari, NTNU & Benteler
Topic Area	Industry 4.0, Digital Twins, AI, Unified Namespace, Digital Product Passport
Format	Comprehensive masterclass (6 modules), self-paced online
Level	Advanced
Target Audience	Industry professionals, engineers, researchers, and university students bridging academic theory with factory reality
Duration	Approx. 4 hours
Platform Link	To be confirmed — course in production
Date Published	To be confirmed
Enrolments	—
Certificate	Yes — ZEvRA Academy certificate awarded on completion

3.3.7.1 Course description.

This comprehensive masterclass bridges advanced academic theory and operational factory reality to address the manufacturing bottlenecks of circular EV production. It demonstrates how digital intelligence — rather than metallurgy alone — is the key to building a safe, profitable, zero-emission vehicle from highly variable recycled materials. Through a continuous operational

storyline anchored in the Škoda Enyaq prototype, learners progress from establishing mathematical sustainability baselines to deploying live Unified Namespaces, Digital Product Passports, Digital Twins, and AI-driven predictive analytics.

3.3.7.2 Course content.

Module 1: The Digital Foundation of Harmonised Circularity — the ZEvRA HCA tool and the 9R digital framework; Module 2: Industrial Data Flow — event-driven Unified Namespace, Edge computing, OPC UA, MQTT; Module 3: Traceability and the Automotive Digital Product Passport — Catena-X, sovereign data spaces, ESPR compliance; Module 4: Virtual Validation and Digital Twins — crashworthiness simulation for variable recycled components; Module 5: AI and Predictive Analytics — structural integrity prediction and microstructure variation modelling; Module 6: Capstone — transversal integration across all 8 ZEvRA physical use cases.

3.3.7.3 Link to ZEvRA research.

This course operationalises ZEvRA's core technological deliverables — the Harmonised Circularity Assessment tool, Catena-X and Digital Product Passport integration pathways, and predictive AI models — into a cohesive industry-ready curriculum. It directly fulfils ZEvRA's mandate to upskill the European manufacturing workforce for zero-emission automotive production.

3.3.8 A8 — Eco-Design (UNN) – Planned

Table 16: *Eco Design course Metadata as planned*

Course Title	Eco-Design
Lead Partner	Northumbria University (UNN)
Topic Area	Eco-Design, Sustainable Product Design, Environmental Performance, Circular Economy
Level	Advanced
Target Audience	Engineers, product designers, researchers, and industry professionals involved in sustainable product development
Platform	ZEvRA Academy (Moodle-based, hosted by EURECAT)
Status	Planned — course development to be confirmed. Expected delivery at M33.
Certificate	Yes — ZEvRA Academy certificate awarded on completion

This course is planned under Task 5.2.2 and will address eco-design principles and their application to automotive and materials contexts, complementing the Design for Circularity (A4) and Circular Economy (A1) courses in the ZEvRA portfolio. Course content, learning outcomes, and publication timeline will be confirmed and reported in D5.6 (M33).

3.4 Category B — Recorded Webinars

Category B documents the ZEvRA Zero-Emission Solutions Series — a programme of expert-led knowledge transfer webinars hosted under Task 5.1, each covering a specific ZEvRA material use case or technology area. Sessions are designed as open-access events: participants can register and attend live, and recordings are made freely available on the ZEvRA Academy platform following delivery. This dual-access model ensures that expert-led content remains available in a single location for self-directed learning beyond the live event and supports the platform's role as a persistent knowledge repository.

The Series page on the ZEvRA Academy is accessible at: <https://academy.zevraproject.eu/local/staticpage/view.php?page=zero-emissions-solutions-series>

3.4.1 B1 - The Circular EV: Designing Today for Tomorrow's Mobility

Table 17: *The Circular EV: DesigningEV: Designing Today for Tomorrow Mobility Webinar metadata.*

Lead / Author	M. Violeta Vargas-P, EURECAT (EUT)
Format	Recorded webinar (originally delivered live online, 29 April 2026)
Level	Foundation to Intermediate
Target Audience	Researchers, engineers, industry professionals, policymakers, general public
Live Participants	19
Platform Link	https://academy.zevraproject.eu/local/staticpage/view.php?page=the-circular-ev-designing-today-for-tomorrows-mobility
Slides / resources	https://academy.zevraproject.eu/file/ZEvRA_Webinar_series_1.pdf

3.4.2 Secondary Aluminium Alloys for High-Pressure Die Casting (HPDC)

Table 18: *Secondary Aluminium Alloys for High-Pressure Die Casting (HPDC) webinar metadata.*

Lead / Author	A. Morri, University of Bologna (UBO)
Format	Recorded webinar (originally delivered live online, 17 June 2026)
Level	Intermediate to Expert
Target Audience	Researchers, engineers, industry professionals, policymakers, general public
Live Participants	20 – External and Internal
Platform Link	https://academy.zevraproject.eu/local/staticpage/view.php?page=secondary-aluminum-alloys-for-high-pressure-die-casting
Slides / resources	https://academy.zevraproject.eu/pluginfile.php/1054/mod_resource/content/0/T5.2.2%20Aluminum%20training%20HPDC_2a.pdf https://academy.zevraproject.eu/pluginfile.php/1055/mod_resource/content/0/T5.2.2%20Aluminum%20training%20HPDC_2b.pdf https://academy.zevraproject.eu/pluginfile.php/1056/mod_resource/content/0/T5.2.2%20Aluminum%20training%20HPDC_2c.pdf

3.4.3 B3–B8 — Upcoming and Planned Sessions

The following sessions are scheduled for delivery in 2026 as part of the ZEvRA Zero-Emission Solutions Series. Each session will be recorded and made available on the ZEvRA Academy platform following live delivery. Sessions B3 and B4 are imminent at the point of submission; sessions B5–B8 are confirmed in the planning pipeline with scheduled dates.

Table 19: *Upcoming webinar schedule.*

Code	Title	Presenter	Level	Scheduled date	Status
B3	From Scrap to Value: Secondary High-Performance Metal Foam for Improved Crash Safety	FRA	Advanced	01 July 2026	Upcoming
B4	Repurposing of sheet metal steel	FRA	Intermediate	8 July 2026	Upcoming
B5	Digital Product Passport	POLIMI	Intermediate	15 July 2026	Planned
B6	Industry 4.0 Capabilities for Zero-Emission Solutions	NTNU	Intermediate	22 July 2026	Planned
B7	Regulatory Landscape & Compliance for Circular Vehicles	VTI	Foundation–Intermediate	2 September 2026	Planned
B8	Thermoplastics Composites	Compositec (Faurecia)	Advanced	16 September 2026	Planned

3.5 Category C — Video Nuggets (Technology Transfer) (RKW)

3.5.1 Definition of a “ZEvRA learning nugget”

- ZEvRA has developed a variety of products, processes and digital tools, which may become relevant and helpful for the suppliers of OEMs to remain or to become competitive and future-proof. As these research and development results are now available, the ZEvRA consortium aims to transfer that knowledge as fast as possible to the SME-suppliers and to facilitate speeding up the uptake of that knowledge into operational practice of the suppliers.
- The idea to complement the offers of the ZEvRA training platform by “learning nuggets” was born after the implementation of a national qualification program for automotive suppliers in Germany, AutoID, which developed and tested a pilot approach for learning nuggets for shop floor workers of automotive suppliers (Auto_ID: Neues Lernen für neue Kompetenzen | Autoland Sachsen). The results of the pilots can be summarised as follows:

The format of microlearning units, so called learning nuggets, is appropriate for the fast upgrade and qualification of shop floor workers. It is effective:

- when basics, like safety-, security-, quality processes are repeatedly presented,
- when processes, particularly changes or issues that require special interest (i.e. process- and material parameters, collaboration models, data requirements etc.) should be presented to the workers in a format, that can be integrated flexibly into the running operations and
- which do not last longer than 3-5 minutes.

ZEvRA intends to adopt the microlearning units methodology for presenting to the industry employees in an easy and quick to understand format the changes and modifications of the production, which are required for the uptake of the ZEvRA innovations by automotive suppliers. The ambition is to integrate them functionally and methodologically into the ZEvRA academy training platform. This way, the function of the nuggets can be extended, and they can also contribute to increase the attractiveness of the ZEvRA training platform, which targets besides on industry and SME-suppliers, also on academia and researchers as well as on policy makers.

ZEvRA learning nuggets are microlearning units, which are integrated in the ZEvRA training platform, that use short video sequences to transfer the developed innovations, circular methodologies and business models and tools in an easy-to-understand way to industry target groups. They aim to increase awareness and acceptance of circular methods and models and of the developed ZEvRA innovations, in particular.

The ZEvRA learning nuggets are related with the ZEvRA use cases and will focus on the feasibility of the developed circular processes, automotive development and manufacturing processes and business structures.

3.5.2 Learning needs and contextual requirements of the target groups

The goal of the ZEvRA-training platform is to facilitate and to support the increase of awareness and acceptance of circular solutions in the car industry and of the developed ZEvRA innovations. To achieve that objective, two main steps were taken:

1. The identification of the information gap regarding circularity and the ZEvRA innovations to validate the learning needs and to define the objectives,
2. The analysis of the specific learning situation and the specific context, in which the developed means/ tools will be applied.

Both covered aspects determine the didactical approach.

The ZEvRA training platform targets two main groups: the industry and the academia. We identified the learning needs of the groups with an analysis of the acceptance and awareness of circularity which was accompanied by interviews with OEMs and R&D organisations from the consortium, involved automotive suppliers as well as with automotive clusters and networks from

outside of the ZEVra consortium. The representatives from both target groups have emphasised the importance of high ambitions of the training platform in terms of usability, availability of innovative features, like AI-assisted mentoring, knowledge communities as well as the option to integrate/connect the platform with other learning management systems, which are already used in the companies. Obviously, the objectives and training contents differ for each target group. While academia focus on the generation and acquisition of knowledge, the development of technologies and capacities for innovation and technology transfer, industry representatives put emphasis on the well based awareness and acceptance of the developed innovation, which is build on demonstration of the feasibility of the new solutions and information on the fast routes to market. That includes information and/or tools for the management of costs, investment needs, regulations and new emerging value chains.



Figure 9: Learning Nuggets Concept, Target groups, and objectives.

The concept of the “learning nuggets” targets mainly users with an industry background, what includes representatives from all functional and operational units of the companies, comprising all management levels, legal department, research and development, administration, purchase, production/shopfloor, distribution, marketing, communication.

If awareness and acceptance are the focus, the learning contents for industry, supplying SMEs, should systematically address the identified information and resource gaps as well as behavioural aspects: economic, technological, market and competition, environmental and political as well as social factors, which influence the strategic decision making of the companies in terms of the acceptance of circular products and technologies. Below a list of the factors is shown.



Figure 10: Factors that influence the strategic decision.

For ZEvRA learning nuggets that means, that the door-opener message is to show the technological and economic feasibility of the ZEvRA innovations. Therefore, technological aspects should be linked with showing new business opportunities and markets. That link can be realised by the introduction of parts and structures, that have been developed as demonstration use cases by the involved OEMs and the future new products, that result from them.

The second perspective, which is important for the didactical approach to the microlearning units is the learning context of the students and applicants. For industry applicants it is important, that the learning content is provided in a very compact, easy to understand format and that the learning process is easy to integrate in the daily operations. For efficiency purposes, the learning content always should be provided with a reference to the usual daily working situation and tasks of the students/workers.

3.5.3 The didactic-methodological toolkit- experiences and benchmarks

The following chapter provides an overview on the applicable didactic formats for the ZEvRA learning nuggets and the linked learning units. The practical set of used formats depends on the objectives, the individual training and learning context, the starting and the target level of the training as well as from the available learning means and technologies. Based on practical experiences with the development and implementation of learning management systems for SMEs and related benchmarks, 5 relevant didactic approaches have been identified:

Table 20: The didactic-methodological approaches identified for the ZEvRA video nuggets

	Didactic objectives	Content	ZEvRA microlearning examples
1	Problem-based approach understand an operational problem or the process	Focus on practical constraints i.e. costs, Quality and property issues, regulations, procurement requirements, Material selection, Supply chain challenges, Design for circularity	provide realistic challenges and ask to explore solutions OEM presents the requirement to substitute a virgin by a recycled material Students analyse which challenges/problems may arise and explore solutions
2	Case-based approach Demonstrate/recognise the feasibility Reduce scepticism on circular /recycled materials	Focus on Technological processes, Materials properties, structural health monitoring, Compatibility/ integration into other operational processes	Show solutions from ZEvRA use cases and explain, how and why they work Short success stories from industry and research Demonstration of ZEvRA use cases Supplier introduces recycled aluminum. Challenges encountered Solutions developed, results achieved
3	Scenario-based approach Understand the context of a process/challenge, see consequences regarding costs, carbon footprint, compliance, and recyclability	Procurement, Engineering, Quality management	realistic workplace situations to illustrate circular economy decisions. Microlearning units i.e to compare use of virgin against recycled materials
4	Experiential approach Active involvement and engagement to reflect the processes and to develop alternatives according to ZEvRA innovations	All relevant contents possible, Applicable in later learning stages for reflection and development of individual process adoption and implementation	Recognise and validate feasibility within the individual working and company context Validate new circular business opportunities through circular businesses and technologies
5	Storytelling Provision of information, Building acceptance, Emotional linkages	Building positive emotions connected with technical and economic information	Circular Journee of a car roof/bumper etc.

3.5.4 Concept of the ZEvRA learning nuggets – storyboard development and platform integration Development and production plan, contents and timeframe

The development of the use-based nuggets will follow the general structure:

1. Info about the material (what is good for, what is it made of, good for what?)
2. What is new/different now with the ZEvRA approach? Which technological/ innovation challenges had to be mastered?
3. What are the real/ potential benefits/advantages? (Circular value chains, resilience, costs, CO2 emission..., material properties, etc.

4. Interested in learning more and how to do it --- link to the academy

The production of the video nuggets takes place in the second semester of 2026. It started from a discussion with the WP4 leader, who got in touch with all use cases. It is planned, that each use-case leader provides a short video sequence according to the agreed structure and storyboard to RKW, which will finalise the production according to the technical requirements of the training platform.

The storytelling-based introductory video will be produced in parallel in co-operation with Skoda. It will be finished by November 2026 and presented during the 2nd ZEvRa educational conference in Dresden.

1. Showing the ZEvRA prototype and telling the story about the collaboration in ZEvRA, presenting 2-3 highlights (new properties, interesting solutions, saved costs/energy etc.)
2. Click on the part/structure in the explosion picture, used material is named
3. Next click - show other parts/ structures with that material (which other part can be made from that/ contain it, to show relevance of the material group) i.e. for AL, the side impact protection
4. ZEvRA idea – Circular ideas from Europe- how we can substitute virgin materials by recycles?

3.5.5 Development and production plan, contents and timeframe

ZEvRA learning nuggets aim at raising awareness and acceptance among the automotive suppliers about circular materials and technologies. Given the overall concept of the ZEvRA training platform, of which they are one part of the nuggets will function as door-openers, that will raise interest and motivation to diver deeper into the challenges and practical issues of the companies, which they face in terms of transformation and uptake of the innovations. The main doubt of the suppliers is the feasibility of the circular products and technologies. These doubts will be addressed with the learning nuggets for each material group, which was tackled by the ZEvRA use cases by showing the developed solution and highlighting the mastered challenges in terms of development, use and processing of circular materials. The storyboards will be customised according to the major challenges which the use case-groups experienced during the development process.

The nuggets will last max. 120 sec. and can be added to the start of the related education and training units on the ZEvRA platform. This way, they can raise attention and motivation not only for industry users, but also for students from academia, researchers or interested policy makers. The case-based didactical approach is appropriate and will be applied.

Additionally, another nugget will be produced with a storytelling approach. This general learning unit aims to build acceptance and interest by showing a model of the develop ZEvRa-prototype and highlighting all parts, that can be produced with circular materials and technologies and showing the practical success that has been achieved by the project:

- with statements from Skoda development department and other involved OEMs and suppliers about their evaluation of the ZEvRA results,
- with CO₂-footprints and/or LCA-results of circular materials against virgin materials
- with comparative cost calculations for circular vs. virgin material use.

That unit can be used as gateway into the platform. The users will see an explosion graphic of the ZEvRA prototype. They can click on the part/material of interest, and the related nugget will start. Further clicks will lead to the lessons and courses, which explain the technological and scientific details in depth. This way, that nugget will have a certain nudging effect for all targeted groups, which will enforce the awareness raising effect of the training platform in general.

3.6 Category D — Supporting Training Materials from Allied Projects

To complement the core ZEvRA training offer, the platform hosts a curated selection of training materials developed within related European projects. These resources are grouped on the ZEvRA Academy under the thematic section Wider Circular Strategies, which is currently under further development.

The purpose of this category is not to expand the core curriculum but to enrich the learning environment by providing immediate access to additional knowledge on sustainability and circularity from complementary perspectives. While these materials were not originally designed for the automotive sector specifically, they address transversal topics — circular design, life-cycle thinking, material use, and resource efficiency — that are directly applicable to zero-emission mobility value chains and related ecosystems.

The materials currently available under this category originate from the Rebuilding to Last initiative (2022–2024) and cover domains including construction, materials, and environmental assessment. Two resources have been uploaded to date:

Table 21: *Supporting Training Materials from Allied Projects on the platform*

Code	Title	Source project	Level	Enrolments (15/06/2026)
D1	Biomass Circularity & Waste Recycling	Rebuilding to Last (RTL)	Beginner	2
D2	Material Upcycling	Rebuilding to Last (RTL)	Beginner	1

Category D should be understood as an evolving repository. Additional materials from other allied initiatives may be added as the project progresses. Users are encouraged to explore these resources and consider how the concepts presented can be transferred to automotive and mobility contexts, contributing to the cross-sector learning that is a stated objective of the ZEvRA Academy.

3.7 Training Materials KPI Contribution Summary

The table below maps the training materials documented in this section against the relevant project KPIs, providing a consolidated view of current status and outstanding actions as of 15 June 2026. The status column reflects the position at the point of submission; updated figures will be reported in D5.4 (M36).

Table 22: *Training Materials KPI Contribution Summary.*

KPI	Target	Cat. A	Cat. B	Cat. C	Cat. D	Current Total	Status
Training topics (original ZEvRA content)	≥10	6 live (A1-A6) – 2 planned	1 live (B1) – 8 Planned	-	-	3	~ In progress
Platform streams per year	≥200	Contributes	Contributes	Contributes	Contributes	2267 platform visits	✓ On track
Virtual sessions >25 attendees	≥3	Fulfilled for A1	—	-	—	1	~ In progress
Total participants	≥150	60	19+20	-	-	Target met counting the conference participation of 98. 177	✓ On track
Certificate-backed courses	—	6 (A1-A6)	—	—	—	6	✓ On track

4 Workshops and Events

Alongside the ZEvRA Academy's online training portfolio, a programme of live knowledge transfer events forms an equally important strand of WP5's training and dissemination strategy. These events — in-house workshops and annual educational conferences — serve a distinct and complementary function to the self-paced platform courses: they create the conditions for real-time dialogue, cross-sector encounter, and collaborative problem-solving that digital content alone cannot replicate.

Three in-house workshops and three annual conferences are planned under Task 5.2.2. At the time of submission, all three workshops have been delivered, and the first annual conference has been completed. CIRMA 2026 (Conference 2) is confirmed for November 2026, and Conference 3 is planned in alignment with the ZEvRA final project exhibition at the close of the project.

4.1 In-house Workshops

4.1.1 Objectives and Approach

In-house workshops form a core component of ZEvRA's training and knowledge transfer strategy under WP5. Designed to go beyond passive instruction, they create structured environments where participants can interact directly with ZEvRA's research outputs, tools, and methodologies. Each workshop is designed and delivered by a ZEvRA partner institution, with content tailored to the host's area of expertise and the professional profile of the target audience.

The primary objectives are to transfer specialised project knowledge to scientific and industrial communities; to provide practical exposure to ZEvRA's core topics including circular economy principles, materials innovation, eco-design, and digital manufacturing; to align ZEvRA's technical developments with real-world industry needs through direct dialogue; and to contribute to soft skill development — including critical thinking, collaborative problem-solving, and cross-disciplinary communication — among participants..

4.1.2 Target Audience

The in-house workshops target a mixed professional audience drawn from both academia and industry: researchers and academics in materials science, sustainable manufacturing, LCA, and circular economy; engineers and technical specialists from automotive and materials industries; PhD students and early-career researchers; and industry partners and end-users interested in the practical application of ZEvRA's methodologies. Each hosting institution tailored the audience composition to the thematic focus of their workshop.

4.1.3 Workshop 1 — FRA, Germany

Table 23: FRA in-house Workshop data analysis

Workshop Title	Working group: Battery-reuse, -repair and -recycling
Date	21/11/2024
Time	14:00-17:00
Location	Fraunhofer IWU, Chemnitz-Germany
Responsible	Dr. Ing. Thomas Hipke
Target Group	Members of Innovation Cluster Circular Saxony https://circular-saxony.de/ https://eveeno.com/akbatterie
Description	The workshop was about raising awareness, interest and potential follow on activities as well as collecting requirements and specs from industrial partners outside of the ZEvRA consortium. Topics Covered • General information about ZEvRA • Potential application of ZEvRA approaches in battery housings (reuse, repair, recycling of material) • Virtual car concept • Development of circular business models. • Input for design regulations and potential chances and obstacles • Additionally other topics such as second life batteries, robotic disassembling unit at Fraunhofer
KPI and attendance	12 external participants (added list below) + 5 Online participants (PURTEC Engineering GmbH, CeLLife, AGCO Power, Enico, Etteplan from Germany and Finland) + 6 internal employees from different departments of Fraunhofer IWU and 2 participants from RKW
Dissemination	Within the Innovation Cluster.
Outcomes and Highlights	• The workshop met the overall KPI figure of >25 attendees. • TIER 1 suppliers and service providers brought input on the applicability of the ZEvRA approaches for their field of action • Discussion and interest on further collaboration raised • Data mining seems of high interest and was heavily discussed (costs of determination, transfer, ownership) → Focus was on raising interest for ZEvRA and potential future collaboration

4.1.4 Workshop 2 — Northumbria University (UNN), Newcastle, United Kingdom

Table 24: *UNN in-house Workshop data analysis*

Workshop Title	Zero to Circular Workshop: Rethinking Automotive Design for a Sustainable Future
Date	30/04/2025
Time	13:15 GMT+1
Location	SAN205, Northumbria University
Responsible	Engy Ghoniem UNN
Target Group	Academics, undergraduate, and postgraduate.
Description	The workshop was designed to introduce participants to the intersection of two Horizon Europe-funded projects — ZEvRA and SALIENT — and to highlight the growing importance of circular design in the automotive sector. With the EU's recycling rate for relevant materials projected to nearly double by 2030, and regulatory frameworks increasingly demanding circular product design, the workshop positioned ZEvRA's research outputs as timely and directly applicable to the challenges facing the automotive engineering community. Topics Covered - Context and urgency: the EU's circular economy targets and the role of the automotive sector, including projections toward 23.3% recycling rates by 2030; - Introduction to ZEvRA — project objectives, scope, and how it embeds circularity into the full EV value chain from design to end-of-life, targeting at least 59% of European EVs by 2035; - Introduction to SALIENT — novel concepts for safer, lighter, circular, and smarter vehicle structure design, with UNN as technical coordinator; - Circular Economy principles and their practical application to automotive component and material design; - Overview of the ZEvRA educational platform and the training modules available to researchers, students, and industry practitioners; - Open discussion and Q&A with participants on barriers to circular design adoption in industry.
KPI and attendance	25
Dissemination	https://www.northumbria.ac.uk/about-us/news-events/news/zero-to-circular-workshop/
Outcomes and Highlights	- The workshop met its KPI target with 25 participants in attendance, drawn from academic staff, final-year undergraduates, and postgraduate students in mechanical, automotive, and construction engineering; - Participants were introduced to ZEvRA's training resources and directed to the project's educational platform for continued self-directed learning;

- The event was publicly disseminated through Northumbria University's official news and events channel, broadening awareness of ZEvRA's training activities beyond the workshop audience;



4.1.5 Workshop 3— EUT, Spain

Table 25: *EUT in-house Workshop data analysis*

Field	Description
Workshop Title	WP1: Strategy Feasibility Assessment and Eco-design Actions Brainstorming
Date	18/06/2024
Time	10:15–11:00
Location	VTT
Responsible	Violeta Vargas and David Sánchez Domene (EUT)
Target Group	ZEvRA team members
Description	This internal workshop explored the 9R circular strategies to better understand the requirements of different ZEvRA use cases, including steel, aluminium, thermoplastic composites, short fibre plastics, glass, tyres, and rare earth elements. The session focused on assessing the feasibility of these strategies and identifying specific eco-design actions through a structured brainstorming process.
Topics Covered	• Overview and application of 9R strategies • Material-specific circularity challenges across ZEvRA use cases • Feasibility assessment of circular strategies • Identification of eco-design actions • Cross-material comparison and alignment
KPI and attendance	53 internal participants (ZEvRA consortium members)
Dissemination	https://zevraproject.eu/zevra-project-consortium-meeting-advancing-automotive-innovation-and-the-circular-economy/
Results / Outputs	20250205-ZEvRA D1.3 Harmonized Design Repository of DfC Strategies
Outcomes and Highlights	• Consolidation of Design for Circularity strategies across materials and value chains • Direct contribution to Deliverable D1.3 (Harmonized Design Repository) • Identification of feasible eco-design actions per material and use case • Strong internal alignment across partners on circular strategy implementation

ZEVR Project Consortium Meeting: Advancing Automotive Innovation and the Circular Economy

July 26, 2024 | By ZEVR

At the beginning of summer, the second consortium meeting of the ZEVR project took place in Tampere, Finland, hosted at the VTT premises. The 28-partner-strong group gathered to review the project's progress at the six-month mark and outline the next steps to advance the automotive sector and raise awareness of the circular economy.

To foster collaboration and drive innovation within the project, two workshops were organised.

Workshop 1: Led by Eurecat -Technology Centre, this workshop explored the 9R strategies to better understand the specific requirements for various use cases within ZEVR, including steel, aluminium, thermoplastic composites, short fibre plastics, glass, tyres, and rare earth elements.

Workshop 2: Hosted by EDAG Group, this interactive workshop enabled partners to investigate each use case, sharing domain knowledge to better demonstrate the circular car concept. We are excited for the project progress, follow along the ZEVR journey on [LinkedIn](#) and keep up with the future advancements in the project.



This workshop has been selected as the most representative example due to its high level of internal participation and its direct relevance to WP1 core activities. The session brought together a large number of ZEVR partners (53 participants), ensuring broad internal alignment and validation of circular design strategies. It was led by EUT experts responsible for WP1, who have the deepest technical knowledge of the Design for Circularity methodology developed within the project, allowing the session to deliver concrete and actionable outcomes directly contributing to key deliverables such as D1.3. In addition, EUT has organised several other internal workshops throughout the project, such as *WP1: Workshop B Consolidation of a set of actions and AHP*, as well as additional technical sessions in locations like Barcelona, demonstrating a continuous effort to refine methodologies and engage partners. However, this workshop stands out due to its scale, its strong participation across the consortium, and its direct impact on shaping the project's circular design framework.

4.1.6 Performance Indicator

Three in-house workshops were planned under Task 5.2.2, each with a minimum of 25 attendees. All three workshops have been successfully delivered. **[STATUS: 3/3 — COMPLETE ✓]**

4.2 Annual Educational Conference

4.2.1 Overview and Objectives

The ZEvRA annual conference series forms a key pillar of the project's dissemination and training strategy, bringing together stakeholders from across the EV value chain — OEMs, Tier-1 suppliers, research organisations, universities, and policymakers — to engage with ZEvRA's tools, research outputs, and training materials in a dynamic, collaborative setting. The conferences are designed not merely as dissemination events but as active knowledge exchange platforms: each edition translates ZEvRA's scientific and methodological progress into formats accessible to a broad professional audience.

Three annual conferences are planned under Task 5.2.2, co-organised by UNN, FRA, and EUT. The three conferences form a deliberate progression — from stakeholder engagement and barrier mapping (Conference 1) to scientific consolidation and industrial implementation (Conference 2 — CIRMA 2026) to project culmination and legacy setting (Conference 3, aligned with the ZEvRA final exhibition). Each event therefore serves a distinct purpose within the overall project arc, rather than repeating the same format across three years.

The quality threshold for each conference is an average participant satisfaction score of >3.8 out of 5 on a multi-aspect Likert scale, with a minimum attendance target of 25 participants per event.

4.2.2 Conference 1 – Breaking Down the Barriers Toward a Circular Automotive Industry

4.2.2.1 Overview

The 1st ZEvRA Annual Conference was held on 27 November 2025 at EURECAT's facilities in Cerdanyola, Catalonia, Spain, in a hybrid format combining in-person and online participation. Co-organised by Northumbria University (UNN) and EURECAT (EUT), the conference brought together automotive OEMs, Tier-1 suppliers, research and technology organisations, universities, consultants, and circular economy experts to address the practical, technical, and organisational challenges of implementing circularity across the electric vehicle value chain. With 98 total participants, the event significantly exceeded the attendance KPI.

Table 26: *first annual conference metadata overview*

Edition	1st ZEvRA Annual Conference
Date	27 November 2025, 09:15–16:00 CET
Format	Hybrid — in-person and online
Location	EURECAT Facilities, Cerdanyola, Catalonia, Spain
Organisers	Co-organised by Northumbria University (UNN) and EURECAT (EUT)
Total attendance	98 participants (in-person and online)
In-person signatories	63 confirmed (signed attendance list)

KPI status	✓ Met — attendance target ≥25 exceeded; quality threshold ≥3.8/5 exceeded (4.29/5)
Post-conference dissemination	https://zevraproject.eu/breaking-down-the-barriers-toward-a-circular-automotive-industry/

4.2.2.2 Participant Profile

The conference attracted a genuinely cross-sector international audience, the majority of whom were external to the ZEvRA consortium. Participating organisations included major automotive OEMs (ŠKODA Auto, Volkswagen AG, Toyota, SEAT/CUPRA, Nissan Motor Ibérica); Tier-1 and materials suppliers (Benteler, FICOSA, Raffmetal, Crossfire Srl, ComposiTec, Westlake Epoxy); research and technology organisations (Fraunhofer IWU, EDAG Engineering, INCAR-CSIC, TÜBİTAK Marmara Research Centre); universities (Northumbria University, NTNU, UAB, UPC); and industry associations and consultancies (APRA Europe, BAX Innovation, RKW Sachsen). This composition directly reflected ZEvRA's objective of facilitating knowledge transfer across the full EV circularity value chain.

4.2.2.3 Conference Program and flyers



Breaking Down the Barriers Toward a Circular Automotive Industry

27th November 2025

EURECAT Facilities
Cerdanyola, Catalonia, Spain

Conference overview

This first ZEvRA Annual Conference brings together key stakeholders to explore practical pathways toward circularity in the electric vehicle sector. Through keynotes, panels, and workshops, participants will engage with ZEvRA's tools, business models, and training strategies, while identifying barriers and opportunities for collaboration and innovation across the EV value chain.

Time	Description	Speakers
08:45 - 09:15	Registration and Welcome coffee followed by host Welcome note	09:15 - 09:30
09:30 - 10:00	From Ambition to Action: Circularity as the Engine of Europe's Zero-Emission EV Future.	Thomas Hipke (Fraunhofer)
10:00 - 10:30	Driving Innovation in Zero-Emission Vehicle Readiness: The OEM Perspective.	Matthias Klaus Reichelt (SKODA)
10:30 - 10:45	Coffee Break	
10:45 - 11:30	Applying the 9Rs: Barriers and Breakthroughs in Circular EV Design.	Moderator: Stefan Caba (EDAG); Panelists: • Violeta Vargas (EUT), • Chirabak Peter (BZN), • Gianluigi Creonti (CROSS FIRE SRL) • Manuel Molina (TOYOTA) • Alberto Gómez (FICOSA)
11:30 - 12:30	Breaking Down the Barriers: Circularity Challenges in the Automotive Industry.	Moderators: Engy Ghoniem (UNN), Ahmed Elmarakbi (UNN) Panelists: • Katharina Schoeps (RKW), Tony Schuetze (RKW) • Kirsten Lange (APRA), Davar Hemyari (BENTELER/NTNU), • Stefan Caba (EDAG) • Dennis Lauterbach (VW)
12:30 - 13:30	Lunch	
13:30 - 14:45	WORKSHOP: How to Assess Circularity Across the EV Value Chain – Interactive session with live demo and group feedback.	Violeta Vargas (EUT), David Sánchez (EUT) Parallel session for online participants 1st
14:45 - 15:00	Coffee Break	
15:00 - 15:45	From Concept to Market: Circular Case Studies and Skills for the Future EV Workforce.	Moderators: Christian Hannemann (FRA), Davar Hemyari (Benteler/NTNU), • Katharina Schoeps (RKW), Tony Schuetze (RKW) • Kirsten Lange (APRA), • Thierry Renault (COMPOSITEC)
15:45 - 16:00	Closing Remarks & Call to Action	Ahmed Elmarakbi (UNN), Engy Ghoniem (UNN)

Hosted by **eurecat** Co-organised with **Northumbria University** **NEWCASTLE**

Funded by the European Union

Figure 11: First annual conference program flyer.



Figure 12: First annual conference promotion flyer.

4.2.2.4 Conference promotion and collaboration with WP6

Conference promotion was managed in close collaboration with WP6 (Fraunhofer and BAX), in accordance with ZEvRA's corporate design guidelines. WP6 produced the marketing banner, programme, and online registration tool, and designed a dedicated speaker spotlight series to build audience anticipation across the two weeks preceding the event. In total, 13 posts were published on the ZEvRA project website and 18 posts on LinkedIn, spanning the period from 30 September to 1 December 2025).

In order to maximise visibility, WP6 published the following posts on the project website and LinkedIn.

Table 27: 1st annual conference promotion campaign on the LinkedIn

Date	Posts on the website	Link
10 Nov 2025	Speaker Spotlight: Keynote Speaker FRA	https://zevraproject.eu/speaker-spotlight-thomas-hipke-at-the-zevra-annual-conference-2025/
11 Nov 2025	Speaker Spotlight: Keynote Speaker SKODA	https://zevraproject.eu/speaker-spotlight-matthias-reichelt-at-the-zevra-annual-conference-2025/
12 Nov 2025	Speaker Spotlight FRA	https://zevraproject.eu/speaker-spotlight-christian-hannemann-at-the-zevra-annual-conference-2025/
14 Nov 2025	Speaker Spotlight: Session Moderator EDAG	https://zevraproject.eu/speaker-spotlight-stefan-caba-at-the-zevra-annual-conference-2025/
15 Nov 2025	Speaker Spotlight Benteler	https://zevraproject.eu/speaker-spotlight-dr-davar-hemyari-at-the-zevra-annual-conference-2025/
16 Nov 2025	Speaker Spotlight BZN	https://zevraproject.eu/speaker-spotlight-peter-chrabak-at-the-zevra-annual-conference-2025/

17 Nov 2025	Speaker Spotlight EUT	https://zevraproject.eu/speaker-spotlight-violeta-vargas-at-the-zevra-annual-conference-2025/
19 Nov 2025	Event Banner	https://zevraproject.eu/%f0%9f%9a%97%f0%9f%94%8b-breaking-down-the-barriers-toward-a-circular-automotive-industry/
25 Nov 2025	Event Countdown	https://zevraproject.eu/the-annual-zevra-conference-is-just-around-the-corner/
26 Nov 2025	Event Countdown	https://zevraproject.eu/the-zevra-annual-conference-is-happening-tomorrow/
27 Nov 2025	Event report	https://zevraproject.eu/the-zevra-annual-conference-is-underway/
1 Dec 2025	Event Highlights	https://zevraproject.eu/highlights-of-the-annual-zevra-conference-in-barcelona/
23 Jan 2026	Key insights	https://zevraproject.eu/breaking-down-the-barriers-toward-a-circular-automotive-industry/
Date	Posts on LinkedIn	Link
30 Sep 2025	Event promotion	https://www.linkedin.com/feed/update/urn:li:activity:7378809393963761664
24 Oct 2025	Event promotion	https://www.linkedin.com/feed/update/urn:li:activity:7387464648259866624
4 Nov 2025	Speaker Spotlight: Keynote Speaker FRA	https://www.linkedin.com/feed/update/urn:li:activity:7391489887809552384
5 Nov 2025	Event promotion	https://www.linkedin.com/feed/update/urn:li:activity:7391777308258504704
7 Nov 2025	Speaker Spotlight: Keynote Speaker SKODA	https://www.linkedin.com/feed/update/urn:li:activity:7392573125932163072
10 Nov 2025	Event Banner	https://www.linkedin.com/feed/update/urn:li:activity:7393649185511854080
11 Nov 2025	Speaker Spotlight FRA	https://www.linkedin.com/feed/update/urn:li:activity:7393939326214062080
13 Nov 2025	Speaker Spotlight: Session Moderator EDAG	https://www.linkedin.com/feed/update/urn:li:activity:7394682973180133377
14 Nov 2025	Speaker Spotlight Benteler	https://www.linkedin.com/feed/update/urn:li:activity:7395083091683385344
18 Nov 2025	Speaker Spotlight BZN	https://www.linkedin.com/feed/update/urn:li:activity:7396582233383284736
19 Nov 2025	Speaker Spotlight EUT	https://www.linkedin.com/feed/update/urn:li:activity:7396895022580895744
20 Nov 2025	Repost: Event promotion UNN	https://www.linkedin.com/feed/update/urn:li:activity:7397280436248518656
21 Nov 2025	Speaker Spotlight VW	https://www.linkedin.com/feed/update/urn:li:activity:7397582085793910785
25 Nov 2025	Event promotion agenda	https://www.linkedin.com/feed/update/urn:li:activity:7399009932777340928
25 Nov 2025	Speaker Spotlight APRA	https://www.linkedin.com/feed/update/urn:li:activity:7399077063762190336
26 Nov 2025	Event Countdown	https://www.linkedin.com/feed/update/urn:li:activity:7399405495117070338

27 Nov 2025	Event report	https://www.linkedin.com/feed/update/urn:li:activity:7399796933411618816
1 Dec 2025	Event report	https://www.linkedin.com/feed/update/urn:li:activity:7401183287026577409

4.2.2.5 Participant Satisfaction Survey Results

A post-event satisfaction survey was completed by 36 participants using a ten-item multi-aspect Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). All ten dimensions exceeded the >3.8/5 quality threshold, and the overall average score was 4.29/5.

Table 28: Average results for the satisfaction Survey from the first annual conference.

Evaluation Dimension	Score (/5)
Event objectives were clear and well communicated	4.33
Organisation and scheduling were effective	4.39
Content was relevant to professional/research interests	4.36
Speakers/facilitators were knowledgeable and engaging	4.39
Helped better understand ZEvRA goals and innovations	4.31
Increased understanding of circular approaches in automotive	4.25
Strengthened confidence that CE/ZEvRA solutions can be applied in industry	4.14
Encouraged meaningful interaction and discussion	4.42
Provided opportunity to connect and network	4.08
Motivated to follow future ZEvRA activities	4.22
Overall average	4.29 / 5 ✓

Selected qualitative highlights from participants:

- "7 or 8 OEMs were present and open for discussion — a great achievement and very valuable" (Consultant/External Engineer)
- "Connecting with all involved, sharing what everybody in the value chain needs to solve" (OEM)
- "The expert panel discussions in the morning sessions" (Consultant/External Engineer)
- "Adequate insights on circularity and sustainability principles — very useful, especially for researchers not yet versed in the topic" (Research and Development)

Participant feedback identified four areas for improvement in future editions: more dedicated networking time, a larger venue, more tangible demonstrations of technologies and use cases, and increased audience interactivity. All four have been incorporated into the planning of CIRMA 2026.

4.2.3 Conference 2 – CIRMA 2026: Circular Materials & Mobility Conference — From Innovation to Implementation

CIRMA 2026 constitutes the second instalment of the ZEvRA annual conference series, and the first edition of what is intended to be an enduring international conference series on circular materials and mobility. The conference is titled CIRMA — Circular Materials & Mobility Conference — with the subtitle From Innovation to Implementation. It will be hosted on 24–25 November 2026 at the Gläserne Manufaktur in Dresden, the Volkswagen transparent factory that itself exemplifies sustainable automotive production. The two-day format, the peer-reviewed proceedings, and the venue choice all signal a deliberate step up in scientific and industrial ambition relative to Conference 1.

The relationship between Conference 1 and CIRMA 2026 reflects the planned two-conference sequence established in ZEvRA's design: Conference 1 was conceived as a stakeholder engagement and barrier identification event, while CIRMA 2026 shifts the focus to implementation — moving from 'what are the challenges' to 'here is how we are solving them', grounded in the mature project outputs now available in year three.

Table 29: 2nd annual conference overview

Conference title	CIRMA 2026: Circular Materials & Mobility Conference — From Innovation to Implementation
Edition	2nd ZEvRA Annual Conference / 1st CIRMA Conference
Date	24–25 November 2026
Location	Gläserne Manufaktur (Volkswagen), Dresden, Germany
Organisers	Co-organised by UNN, FRA; hosted by Volkswagen
Format	In-person with selected hybrid sessions
Abstract submission deadline	Extended to 30 June 2026
Proceedings	ZENODO platform, and Springer Nature peer-reviewed conference proceedings;
KPI target	≥25 attendees; satisfaction score ≥3.8/5
Status	Planned — in preparation

4.2.3.1 Scientific Scope and Format

CIRMA 2026 places greater emphasis on practical, market-oriented solutions for circular materials and mobility, moving beyond conceptual sustainability discussion toward industrial implementation evidence. Key topic areas include circular vehicle and component design, industrial implementation strategies, value chain management and resource recovery, advanced circular materials, digital technologies and artificial intelligence for circularity, and regulatory compliance for circular vehicles.



Figure 13: Introductory flyer about CIRMA conference

The programme will comprise scientific paper presentations, live industrial demonstrations at the Gläserne Manufaktur, interactive workshops, innovation showcases and pitches, and structured networking sessions — directly responding to the feedback from Conference 1 participants who requested more tangible demonstrations and more interactive formats. A selection of papers will be published in Springer Nature peer-reviewed proceedings; selected contributors will additionally be invited to submit to a special issue in a relevant journal following the event.

4.2.3.2 CIRMA Thematic Scope

CIRMA 2026 has been structured around seven interconnected thematic areas that reflect the breadth of the ZEvRA project's research agenda: Circular Vehicle Architectures; Circular Components, Design, and Manufacturing; Recycled Aluminium and Lightweight Alloys; Composites and Polymers; Steels and Tyres; and Digital Methods for the Circular Economy. These themes are addressed through two parallel submission tracks — Track A (Research Innovation), which welcomes contributions from both academia and industry on circular materials, recycling technologies, and vehicle design; and Track B (Industrial Innovation), which focuses on OEM circular strategies, automotive material demonstrators, and proof-of-innovation concepts. The thematic structure was deliberately designed to bridge academic research with industrial implementation, ensuring that the conference programme reflects the needs of the full automotive value chain — from materials scientists and design engineers to OEM strategists and sustainability leaders. This dual-track approach responds directly to the ZEvRA project's objective of

accelerating the translation of circular economy principles from laboratory-scale innovation into real-world automotive applications.

4.2.3.3 Participation Profile

Table 30: Participation profiles for the CIRMA conference

Research & Academia	Industry & Innovation	Policy, Education	Networks &
Universities, research institutes, PhD researchers, early-career researchers, LCA/LCC experts, materials scientists, manufacturing researchers	OEMs, Tier 1/Tier 2 suppliers, recyclers, remanufacturers, material producers, start-ups, digital technology providers, engineering consultancies	EU projects, cluster organisations, policymakers, regional innovation bodies, training providers, students, professional networks	

4.2.3.4 CIRMA Connection to ZEvRA Training Activities

CIRMA 2026 serves not only as a dissemination event but as an extension of the training programme. Presentations by ZEvRA researchers on the project's use cases and methodologies constitute live knowledge transfer to the conference audience, complementing the platform-based courses and webinar series. The conference also provides a high-visibility setting for the ZEvRA Academy to be showcased to a new, international audience — with the potential to drive new enrolments across the full course portfolio.

4.2.3.5 CIRMA disseminations activities plan

With collaboration between UNN as the TL and WP6 as the dissemination responsible we released a 2 post a week campaign. Each week 2 posts will be posted on the linkedin page. The posts will include:

1. Promotional videos designed by UNN and edited and reviewed by FRA and BAX. (in-progress). Examples can be found in [here](#) and [here](#)
2. Carousel slide posts to introduce the conference and its themes. (in-progress) example: can be found [here](#)
3. Scientific committee introduction to attract different sectors (planned)
4. Invited speakers' promotional campaign (planned)
5. OEMs round table. (planned)
6. Workshops (planned)
7. Presenting ZEvRA demonstrators (Planned)

4.2.4 Conference 3 — ZEvRA Final Exhibition Conference

4.2.4.1 Overview and Rationale

The third and final conference in the ZEvRA series is planned to coincide with the project's closing Final Exhibition — the capstone public event marking the conclusion of ZEvRA's three-year

research programme. This alignment is deliberate and strategic: by embedding the final conference within the project's closing event, the consortium maximises the combined impact of both activities, drawing a larger and more diverse audience than either would achieve independently, and ensuring that ZEvRA's most mature, fully validated outputs are presented in their most complete form.

Where Conference 1 mapped the challenge landscape and Conference 2 (CIRMA 2026) consolidates the scientific and industrial evidence base, Conference 3 is conceived as a legacy-setting event — one that looks forward from ZEvRA's results toward the broader implications for the automotive sector, European circular economy policy, and the next generation of research. It is the moment at which the project formally hands its outputs to the wider community.

Table 31: 3rd annual conference overview

Edition	3rd ZEvRA Annual Conference
Alignment	Co-located with the ZEvRA Final Project Exhibition
Expected date	11.-12.05.2027
Location	Laurin & Klement Kampus, Mladá Boleslav, Czech
Organisers	UNN, FRA, EUT in collaboration with all consortium partners
Format	In-person and Live stream
KPI target	≥25 attendees; satisfaction score ≥3.8/5
Status	Planned — concept confirmed; logistics and programme to be developed

4.2.4.2 Intended Programme and Format

The programme for Conference 3 will be developed in close coordination with the planning of the ZEvRA Final Exhibition and will be reported in full in D5.6 (M33) and in the project's final reporting. At this stage, the intended structure encompasses the following elements:

- A showcase of ZEvRA's full use case portfolio — presenting the eight material use cases (steel, aluminium, thermoplastic composites, short-fibre plastics, glass, tyres, and rare earth elements) in their final validated form, with live demonstrations where feasible and the Circular Car Prototyp with the physiscal car and virtual car presentation
- A dedicated session on the ZEvRA training legacy — presenting the full ZEvRA Academy portfolio to a broad audience, demonstrating course content, platform functionality, and certificate outcomes, and outlining the platform's post-project accessibility plan.
- A policy and industry roundtable — structured dialogue between ZEvRA partners, OEMs, policymakers, and EU project officers on the pathways from ZEvRA's outputs to systemic change in the automotive sector, including the role of regulatory frameworks such as ESPR, the Batteries Regulation, and the Digital Product Passport.
- Networking and knowledge exchange — structured activities designed to catalyse collaborations and communities of practice that will continue beyond the project's formal end.

4.2.4.3 Connection to Training Activities and Legacy

Conference 3 occupies a particular role within the training and dissemination strategy because it is the point at which ZEvRA's training programme is most visibly presented in its entirety. The ZEvRA Academy — its courses, webinar archive, certificates, and platform — will be fully operational by this point, and the conference provides the ideal setting to introduce it to new audiences and to consolidate its reputation as a reference resource for circular automotive education. The event is also directly relevant to the project's legacy objectives: by bringing together the scientific, industrial, and training strands of ZEvRA in one venue, it demonstrates the coherence and completeness of the project's contribution to the circular automotive knowledge base.

4.2.5 Conference Series Overview

Table 32: Summary of the three-conference series at a glance, showing the progression of purpose, format, and expected impact across the project lifecycle.

	Conference 1	Conference 2 — CIRMA 2026	Conference 3 — Final Exhibition
Date	27 Nov 2025	24–25 Nov 2026	May 2027 (planned)
Location	EURECAT, Cerdanyola, Spain	Gläserne Manufaktur, Dresden	TBC
Format	Hybrid	In-person (+hybrid)	In-person
Organisers	UNN + EUT	UNN + FRA	UNN + FRA + EUT + all partners
Thematic focus	Barrier identification, stakeholder engagement	Scientific results, industrial implementation	Project legacy, use case showcase, training handover
Proceedings	No	ZENODO, Springer Nature	NO
Total attendance	98	Target: ≥50	Target: ≥50
Satisfaction score	4.29 / 5 ✓	Target: ≥3.8/5	Target: ≥3.8/5
Status	✓ Complete	Planned — in preparation	Planned — concept confirmed

5 Training Delivery Statistics and KPI Monitoring

This section consolidates the training delivery figures and project KPI status for all activities documented in Sections 3 and 4. Statistics are drawn from ZEvRA Academy platform data, event attendance records, and partner-confirmed figures. Platform-level analytics (completion rates, average time on course, learner satisfaction per course) are pending and will be reported in full in D5.6 (M33) and D5.4 (M36).

5.1 Course Delivery — ZEvRA Academy

Table 33: Summary of all courses currently live on the ZEvRA Academy, together with their enrolment figures as of 15 June 2026.

Ca t.	Course Title	Lead	Platform Link	Published	Enrolme nts (17/06/ 26)	Status
A1	Circular Economy	UNN	https://academy.zevraproject.eu/course/view.php?id=29	21/01/2025	25	✓ Live
A2	LCA and Circular Economy	NTNU	https://academy.zevraproject.eu/course/view.php?id=30	16/01/2026	13	✓ Live
A3	Lightweight Design — Aluminium Foam	FRA	https://academy.zevraproject.eu/course/view.php?id=31	24/01/2026	11	✓ Live
A4	Design for Circularity	EUT	https://academy.zevraproject.eu/course/view.php?id=32	18/04/2026	2	✓ Live
A5	Quality, Traceability & Standardisation	UNN	https://academy.zevraproject.eu/course/view.php?id=33	07/05/2026	8	✓ Live
A6	Secondary Aluminium Alloys for HPDC	UBO/EUT/END	https://academy.zevraproject.eu/course/view.php?id=34	08/06/2026	1	✓ Live
A7	Industry 4.0 Digital Enablers	NTNU	Pending	TBC	—	⌚ In prod.
A8	Eco-Design	UNN	Pending	TBC	—	○ Planned
D1	Biomass Circularity & Waste Recycling	RTL (external)	Platform	—	2	✓ Live
D2	Material Upcycling	RTL (external)	Platform	—	1	✓ Live

Note: Base URL: <https://academy.zevraproject.eu>. Platform analytics (Updated TM, completion rate, certificates issued, average time on course, learner satisfaction scores) will be provided in D5.6.

5.2 Platform Visits and Additional Metrics

Table 34: Additional Training Materials Metrics

Metric	Value	Date / Period
Total platform visits	2,156	Since 26 Feb 2026
Total course enrolments (A1–A6, D1–D2)	60	As of 15 June 2026
Webinar B1 — live session attendance	19	29 April 2026
Conference 1 — total participants	98	27 November 2025
Conference 1 — in-person signatories	63	Signed attendance list
In-house workshops — total participants	103	Workshops 1+2+3 combined

5.3 KPI Monitoring Dashboard

The table below provides a consolidated view of all WP5 KPIs as of 15 June 2026, drawing on data from all activities documented in Sections 3 and 4. This dashboard will be updated and expanded in D5.4 (M36) and D5.6 (M33), which will incorporate platform analytics, course completion data, and post-event evaluation results.

Table 35: WP5 KPI monitoring by 15th of June 2026.

KPI	Target	Current value	Status	Action / note
Training topics — original ZEvRA content	≥10	6 live (A1–A6); A7 in production; A8 planned	 In progress	A7 and A8 will bring total to 8.
Platform streams per year	≥200/yr	2.267 platform visits since Feb 2026	 In progress	Will be reported in D5.6.
Virtual sessions with >25 live attendees	≥3	1 confirmed (A1 — Circular Economy workshop)	 In progress	Webinars B2 (17 Jun) and B3 (24 Jun) are immediate opportunities. Session leads to be briefed on 25-attendee target.
Total participants — all activities	≥150	197 (60 courses + 19 webinar B1 + 20 Webinar B2 + 98 Conf. 1)	✓ On track	Target met when conference participation is counted.
Certificate-backed courses live	—	6 (A1–A6)	✓ On track	A7 and A8 will add further certificate-backed courses.
In-house workshops delivered (≥25 att.)	3	3/3 complete — FRA (25), EUT (53), UNN (25)	✓ Complete	KPI met for all three workshops.
Annual conference satisfaction score	≥3.8/5	4.29/5 (Conference 1, 36 respondents)	✓ Exceeded	All 10 dimensions above threshold. CIRMA 2026 and Conf. 3 surveys planned.
Platform analytics (per-course data)	—		⚠ Pending	Enrolments, completion, certificates, time-on-course to be confirmed. Will be reported in D5.6.

6 Final Remarks

6.1 Summary

6.1.1 Training Portfolio

At project month M30, ZEvRA's Work Package 5 has delivered a training portfolio that is substantive, multi-format, and directly grounded in the project's own research outputs. Six complete, certificate-backed courses are live on the ZEvRA Academy, spanning beginner to advanced levels across the most critical competency areas in circular automotive manufacturing: Circular Economy (A1), LCA and Circular Economy (A2), Lightweight Design by Recycling-based Aluminium Foam (A3), Design for Circularity (A4), Quality, Traceability and Standardisation of Recycled Materials (A5), and Secondary Aluminium Alloys for High-Pressure Die Casting (A6). Two further courses are in active development — Industry 4.0 Digital Enablers for Circular Automotive Value Chains (A7, NTNU) and Eco-Design (A8, UNN) — and will be published before the project's conclusion.

Every live course connects directly to ZEvRA's research work packages. Courses A3 and A6 are authored by the researchers who led the corresponding WP2 and WP4 use cases; A4 by the EUT team responsible for the WP1 Design for Circularity methodology; A5 by the researcher whose work directly informs ZEvRA's traceability and Digital Battery Passport outputs. This is not incidental — it reflects a deliberate development philosophy that assigns content authorship to the expert closest to the underlying research, ensuring learners engage with knowledge that is both current and authentic.

The ZEvRA Academy platform has also been significantly enhanced since its launch. The introduction of an AI Course Tutor, pre- and post-course assessments, digital certificates with verification codes, thematic navigation (Automotive Circular Strategies, Automotive Circular Materials, Wider Circular Strategies), and progressive multilingual development have transformed the platform from a functional repository into a genuinely learner-centred environment. These enhancements also strengthen the platform's robustness for autonomous operation in the post-project period.

6.1.2 Knowledge Transfer Events

Three in-house workshops have been delivered, each meeting the minimum attendance KPI of 25 participants and contributing distinct outputs: Workshop 1 (Fraunhofer IWU, November 2024) engaged the Innovation Cluster Circular Saxony on battery reuse and recycling, generating concrete industry input on ZEvRA's applicability; Workshop 3 (EURECAT, June 2024) produced results that fed directly into Deliverable D1.3 — Harmonized Design Repository of DfC Strategies; and Workshop 2 (UNN, April 2025) introduced a new cohort of engineering students to circular automotive design and directed them to the ZEvRA Academy for continued learning. The workshop programme is complete at 3/3.

The first annual educational conference — Breaking Down the Barriers Toward a Circular Automotive Industry — stands as one of the most visible achievements of WP5 at M30. With 98 participants from OEM brands including ŠKODA Auto, Volkswagen, Toyota, SEAT/CUPRA, and Nissan, alongside Tier-1 suppliers, research organisations, and universities across Europe, it demonstrated that ZEvRA has successfully convened the cross-sector stakeholder community at the heart of its research mission. The overall satisfaction score of 4.29 out of 5 — with all ten Likert dimensions above the 3.8/5 quality threshold — confirms substantive value to participants.

The ZEvRA Zero-Emission Solutions webinar series has launched successfully with Session B1 (EURECAT, 29 April 2026, 19 live participants), with sessions B2 through B8 scheduled across June to September 2026. This series ensures that ZEvRA's technical outputs reach broad, open audiences and that the ZEvRA Academy becomes associated with ongoing, current expert content — not only with the static course portfolio.

6.1.3 Achievements Against KPIs

Table 36: Full WP5 achievement record at M30, mapped against project KPIs and planned activities

Activity / Output	Status	Evidence / note
Six live certificate-backed courses (A1–A6)	✓ Complete	ZEvRA Academy, 60 total enrolments; all live Jan–Jun 2026
Three in-house workshops ≥25 attendees	✓ Complete	FRA (25), EUT (53), UNN (25) — all KPIs met
Conference 1 — attendance ≥25	✓ Complete	98 participants; 63 in-person signatories; 27 Nov 2025
Conference 1 — satisfaction ≥3.8/5	✓ Complete	4.29/5 overall average; all 10 dimensions above threshold
ZEvRA Academy platform live with enhancements	✓ Complete	AI tutor, certificates, assessments, multilingual, 2,156 visits
Webinar Series Session B1 (EUT)	✓ Complete	29 Apr 2026, 19 live participants; recording available on platform
Stakeholder diagnostic workshop (Mentimeter)	✓ Complete	43 participants; results integrated into training design
Virtual sessions ≥25 attendees — 1 of 3	✓ 1 confirmed	A1 (Circular Economy) met the threshold; 2 further sessions needed
CIRMA 2026 — abstract submission open	✓ Complete	Deadline extended to 30 Jun 2026; ZENODO + Springer Nature proceedings
Course A7 — Industry 4.0 (NTNU)	🕒 In production	Presentations complete; recording underway; publication pre-M33
Course A8 — Eco-Design (UNN)	🕒 Planned	Development to begin; delivery expected at M33
Webinar Series B3–B8	🕒 Scheduled	Jun–Sep 2026; B3 (1st July) imminent
Video Nuggets	🕒 In production	September – December 2026
CIRMA 2026 — Conference 2	🕒 Planned	24–25 Nov 2026, Dresden; dissemination campaign active
Conference 3 — Final Exhibition (ŠKODA)	🕒 Planned	M36; co-located with ZEvRA Final Exhibition

6.2 Outlook

6.2.1 Completing the portfolio

The six months between this submission and project end (M30–M36) are the most activity-intensive period in WP5's delivery schedule, with three parallel strands running concurrently: completing the course portfolio, delivering the full webinar series, staging the final two conferences and the final exhibition.

Course A7 — the Industry 4.0 Digital Enablers masterclass — is in the final stages of production. It is the most technically ambitious course in the portfolio, covering Unified Namespaces, Digital Product Passports, Catena-X, Digital Twins, and AI-driven predictive analytics through the Škoda Enyaq prototype use case. Its publication will bring the live course count to seven and substantially deepen the platform's advanced technical offer. Course A8 (Eco-Design, UNN) will complete the planned eight-course portfolio and address a skills gap consistently identified in ZEvRA's own stakeholder research.

The webinar series — sessions B2 through B8, June to September 2026 — represents the most significant immediate knowledge transfer opportunity. Each session covers a distinct ZEvRA use case and will be recorded for permanent availability on the ZEvRA Academy, extending platform value well beyond live attendance. Sessions B2 (17 June) and B3 (24 June) are within days of this submission and must be treated as an immediate consortium-wide promotion priority.

6.2.2 KPI risks and mitigation

The outstanding risk at M30 is the virtual sessions KPI (≥ 3 sessions with >25 live attendees). One session is confirmed — the Circular Economy course (A1). Session B3, scheduled for the 1st of July, is the next critical opportunities. The consortium should treat their promotion as urgent, with all partners posting on LinkedIn and sharing registration links in the days immediately surrounding submission. For sessions B4–B8 (July–September), session leads should be formally notified of the 25-attendee target and supported with promotion assets from WP6 at least ten days before each date.

6.2.3 CIRMA 2026, Conference 3, and the path to legacy

CIRMA 2026 represents a deliberate step up in ZEvRA's knowledge exchange ambition. The move from a single-day hybrid event to a two-day in-person conference at the Gläserne Manufaktur — with peer-reviewed proceedings published via ZENODO and Springer Nature, live industrial demonstrations, and two parallel submission tracks — signals that ZEvRA's conference series has matured into a scientifically credible and industrially relevant platform. The active dissemination campaign already underway (two LinkedIn posts per week, promotional videos, carousel posts, with speaker and OEM roundtable campaigns planned) gives CIRMA 2026 a strong foundation for exceeding the KPI target.

Conference 3, co-located with the ZEvRA Final Exhibition at ŠKODA, will serve as the project's capstone knowledge transfer event. At that point, all eight courses will be live, the full webinar series will be accessible on the platform, and ZEvRA's use cases will be presented in their final validated form alongside live demonstrators. The conference will formally hand the project's training legacy to the wider community — OEMs, Tier-1 suppliers, researchers, and policymakers — and establish the ZEvRA Academy as a lasting reference resource for circular automotive education.

6.2.4 Beyond the project

The training programme documented in this deliverable will outlast ZEvRA itself. The ZEvRA Academy is designed to remain accessible and functional for at least two years after project completion — providing open, certificate-backed, self-paced learning to students, engineers, researchers, and policymakers without requiring any ongoing consortium investment. Every course is self-sufficient: modular, clearly structured, connected to primary source materials, and supported by an AI tutor capable of answering learner questions autonomously.

In the broader context of Europe's circular economy transition, this matters. The skills gap in circular automotive manufacturing is real and consequential. ZEvRA's training programme does not close this gap alone — but it makes a concrete, accessible, and lasting contribution. That contribution is documented in full across the sections that precede these remarks. Its measured impact will be reported in D5.6 and D5.4.

Table 37: Documentation of the full list of the remaining tasks

Planned activity	Timeline	Lead	Significance
Course A7 — Industry 4.0 (NTNU)	M31–M32	NTNU	Completes advanced digital technologies strand; 4-hour masterclass
Course A8 — Eco-Design (UNN)	M33	UNN	Completes 8-topic portfolio; addresses identified skills gap
Webinar Series B2–B8	Jun–Sep 2026	Multiple leads	Covers all ZEvRA use cases; advances virtual sessions KPI
Video Nuggets	M33–M36	RKW	SME/industry reach; microlearning for time-constrained audiences
CIRMA 2026 — Conference 2	24–25 Nov 2026	UNN, FRA	ZENODO + Springer Nature proceedings; establishes CIRMA series
Conference 3 — Final Exhibition (ŠKODA)	M36	UNN, FRA, EUT and all partners	Project legacy event; full portfolio showcase; training handover
D5.4 — Awareness and Acceptability final version	M36	APRA (lead)	Updated and final KPI monitoring
D5.6 — Implementation and evaluation	M33	RKW (lead)	Measured impact of all D5.5 activities; video nuggets and KPI update.
Post-project platform operation	Post-M36	EUT (platform host)	ZEvRA Academy accessible for ≥2 years after project end