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Overview of tested online and offline capacity building materials

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Executive Summary

This report presents an overview of the tested online and offline, information and engagement learning materials for the Every1 project. It provides a detailed description of the methods, standards, processes, development, testing, translation and lessons learnt from collaboratively developing 51 online and 36 offline English language learning materials to support Europe wide engagement in the digital energy transition. Learning materials were openly licensed under a CC BY-SA 4.0 license to enable remix and localisation. In total 528 translated files are available through the Every1 website. This includes translations into 23 European languages.

Developing robust processes and mechanisms to support this work were essential. Co-creation within both the Consortium and externally with a variety of stakeholders was key to the development of these resources. This work was highly dependent on other activities in the project and engagement with stakeholders (such as ecosystem partners and market enablers) to progress project activities. Specific cross-work package meetings to support co-creation activities with selected stakeholders were instigated. Sprint methodologies were used to support Consortium expertise input and co-creation of learning materials. Cyclical development, production and testing processes were put into place to structure these activities and provide clear identified points at which engagement with stakeholders would take place.

The testing of the learning materials enabled user feedback from diverse stakeholders, including energy communities, municipalities, business clusters and market enablers. A range of testing approaches were utilised over 6 testing cycles, including 7 webinars (47 participants total), online surveys (38 participants), interviews (60 participants), 5 workshops (50 participants total), 7 roadshow activities (144 participants total), across 14 European countries. This supported the project to align the learning materials with diverse learning needs.

The flexible, iterative and agile approach enabled us to both respond appropriately to a variety of collaborative and testing opportunities with stakeholders throughout the project lifecycle, and to adjust workstreams accordingly.

To conclude, we offer a summary and reflection on our approach and strategies for the development and testing of learning materials, with associated further recommendations based on lessons learnt.

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1. Introduction

1.1. Background to Every1 Learning Material Development and Testing

The Every1 project (https://every1.energy/about; November 2022 – April 2026) aimed to engage all European citizens in the digital energy transition (the transformation of the energy sector driven by digital technologies to create a more sustainable, efficient, and secure energy system). The collaborative development and testing of openly licensed (CC BY-SA 4.0), 87 online and offline learning materials on energy digitalisation, and the creation of a capacity building community (with 90 members as of April 2026) were central Every1 activities. More specifically, the work described in this report contributed to Every1's objective "…to deliver a lasting & impactful multi-language capacity building program on digitalisation of energy" (https://cordis.europa.eu/project/id/101075596/reporting).

From September 2023 – April 2026, 87 online and offline learning materials were developed, in 16 different formats, to suit a wide variety of audiences and needs. These learning materials were piloted, tested and validated in collaboration with external stakeholders. The learning materials were tested to gather user feedback from a wide range of stakeholders, including energy communities, municipalities, business clusters, and market enablers. Six testing cycles employed multiple methods: 7 webinars (47 participants total), online surveys (38 participants), interviews (60 participants), 5 workshops (50 participants total), 7 roadshow activities (144 participants total), across 14 European countries. This extensive testing process supported the alignment of the learning materials with diverse learning needs and contexts, in which we found that especially concrete tips and examples related to daily life were key.

Further to learning materials being improved and updated, selected learning materials were translated into a wide range of European languages. A total of 528 translated files were produced, including translations into 23 European languages. All Every1 learning materials were curated into learning pathways (defined in D3.1 *Identifying knowledge gaps and capabilities for all stakeholders* as "…structured sequences of educational experiences or courses designed to help individuals achieve specific learning goals or competencies") and shared via the project's Knowledge Hub (https://every1.energy/knowledge-hub) in addition to being hosted on platforms such as OpenLearn Create (https://www.open.edu/openlearncreate/).

Core to the project's activities was ongoing and extensive engagement with a wide range of stakeholders, to better understand their needs. This work was conducted throughout the project's learning material development and involved a high degree of collaboration across the Consortium. For example, the Every1 report D1.1 *Extended Stakeholder and Ecosystem Mapping* (April 2023) and D3.1 *Identifying knowledge gaps and capabilities for all stakeholders* (October 2024) identified learning material knowledge gaps and stakeholder needs. This work directly informed the development of the project's learning materials. Similarly, curation of known existing resources on energy digitalisation identified further gaps in provision, as well as underpinning the development of learning pathways. Other work packages focused on the dissemination and promotion of the learning materials, including project events to support their development (e.g. showcase) and developing relationships with different stakeholders across Europe, or impact evaluation of the project's learning materials.

1.2. Purpose and Scope of the Report

The purpose of this report is to provide an overview of the methods and standards, formats, theme identification, material development, testing and revision, translation and cataloguing of collaboratively developed online and offline learning materials on energy digitalisation, produced during the Every1 project during the period September 2023 - April 2026. The report documents key achievements, whilst also reflecting on the lessons learnt during this work to provide recommendations which may be beneficial for future projects and initiatives.

2. Learning Material Methodology

This section outlines the methodologies and principles underpinning the development of Every1 learning materials. It covers the cyclical approach taken to organising the production of both online and offline learning materials, the integration of co-creation activities into our processes and the pedagogical approaches used.

2.1. Learning material production: A cyclical approach

Organising the planning, development, production, testing and translation of both the online and offline learning materials requires a highly organised, yet flexible, approach. To help provide structure and the opportunity for iterative improvement of processes, a cyclical approach was developed by the OU.

		Month		M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25
Cycle ONE	Activity	Start	End	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	
	Identify learning materials for production in this cycle	M14	M16															
	Learning material development and production	M14	M19															
	Co-creation with consortium	M15	M19															
	Develop promotion materials	M16	M17															
	Initial sharing of promotional materials with ecosystems and other parties	M17	M17															
	Develop evaluation survey	M17	M17															
	Roundtable event	M18	M18															
	Share details of evaluation with committed ecosystems	M19	M20															
	Feedback discussions with committed ecosystems	M20	M21															
	Review feedback and amend learning materials	M22	M22															
	External promotion materials finalised and ongoing dissemination	M22	M36															
	Release of finalised material and ongoing monitoring	M22	M36															

Table 1: Cycle One (M11-M24)

There were initially five cycles of learning material development, production and testing. An additional cycle six was later introduced so learning materials that were not available for testing over summer 2025 or required specific audience testing (e.g. those for secondary schools), could be reviewed. Each cycle timelines the main activities contributing to both the creation of online and offline learning materials. Aside from ongoing promotion and monitoring/evaluation work after the release of the final English language version of a learning material and translation work (which is not currently accounted for in the cycles, see below) the six cycles were:

- M14 - M22 (December 2023 - August 24): Cycle One
- M19 - M24 (May - October 2024): Cycle Two
- M23 - M28 (Sept 24 - Feb 2025): Cycle Three
- M27 - M32 (Jan - June 25): Cycle Four
- M31 - M36 (May - October 25): Cycle Five (with an addition extension to M38 to cover translation)
- M33 – M38 (July – December 25): Cycle Six (including extension to M38 to cover translation)

The chart above shows a typical cycle, and encompasses all key activities involved in the English language production and testing of learning materials. More specifically the chart shows cycle one (M11-M24).

Initially this approach was developed to give clear timelines for delivery of the online and offline learning materials, and to ensure a timely delivery for testing activities. It was further improved in the first year of learning material development by adjusting to reflect partner availability and national or summer holiday periods. A separate mapping of anticipated learning material development and production timelines was also conducted to help better understand the lead in time required to deliver specific learning material formats. This ensured that learning materials (such as the MOOC, which required several cycles of planning and production time) started their development during, for example, cycle three, for delivery and testing by cycle four.

This cyclical approach was flexible and iterative. Further adjustments, including the addition of cycle six, enabled a balanced and staggered availability of learning materials for testing to take place. In particular, the identification of learning materials that required specific audience testing (e.g. materials for secondary schools) often needed to flex with the availability of the audience concerned. Once final learning materials were available, ensuring that translation into specific languages were prioritised accordingly (e.g. materials for a specific event) was key. THNK managed the translation process, and this is discussed in more depth in section 2.4.

2.1.1. Plan, Do Check, Act (PDCA) Methodology

This cyclical approach is informed by a Plan, Do, Check, Act (PDCA) methodology. This methodology, when applied to the production of Every1 offline and online learning materials, enabled us to manage the development and production of 87 learning materials in multiple formats and languages, whilst building in opportunities for reflection and iterative improvements in response to testing and other feedback. It also ensures that, if a consistent number of learning materials are developed, tested and released for each cycle, that activities remain staggered and manageable.

The following diagram shows a typical series of PDCA cycles:

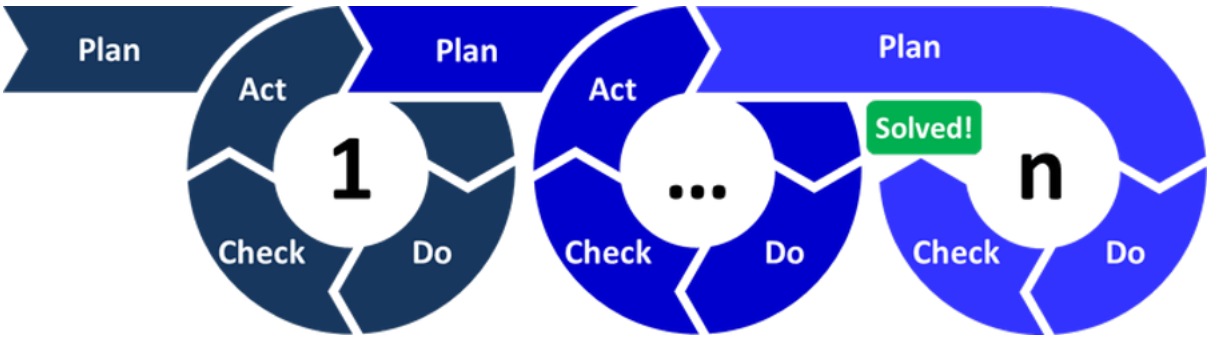

Image credit: *PDCA Circle Sequence* by Christoph Roser is licensed CC BY-SA 4.0.

Within the context of work package 4 (WP4) activities, the four stages of the PDCA cycle can be described as follows:

Plan

Within the Every1 context, planning the learning materials included activities such as reviewing existing knowledge gaps and mapping these against existing learning material types, developing learning outcomes and personas, deciding on the format of the learning material and identifying course authoring and production expertise. Other considerations included insights from stakeholders regarding demand for specific learning materials, so that these were prioritised accordingly.

During this stage, the OU developed appropriate support for learning material authors and experts in the Consortium, and scheduled meetings to discuss learning material scope and coverage.

Do

This stage is three-fold. First, the learning material was drafted by subject experts within the Every1 Consortium, and/or external stakeholders. Activities at this stage included authoring content and identifying openly licensed images for inclusion in the learning material. For example, images used in online learning materials were checked and recorded in an *Asset Tracker).*

Second, the draft learning material content was shared with the relevant production experts, so that it could be formatted in preparation for testing.

Third, OU and Eworx prepared promotional materials (e.g. overview descriptions and slides) to support the testing of individual online and offline learning materials, coordinated by TuE. TuE developed survey instruments, interview guidelines and workshops. Online and offline learning materials were showcased and testing opportunities shared in an online webinar with stakeholders to kick-off the testing period.

Check

This stage is two-fold. First, learning materials were reviewed internally by Consortium partners. The content of learning materials was reviewed by subject experts within the Consortium, and production experts for whether they comply with the project's standards and requirements (see section 3.0). This stage happened prior to, and during, the second of the "do" stages, as outlined above.

Second, learning materials were tested by stakeholders and committed ecosystems (e.g. energy communities, DSOs, SMEs). Led by TuE learning materials were tested and a range of feedback (e.g. content coverage, format appropriateness, general satisfaction) was collected from stakeholders over a period of approximately 6-8 weeks through surveys, interviews and focus groups (see section 4.0). This data was subsequently analysed and presented to the WP4 team in a testing report for each cycle.

Act

Feedback from stakeholders was reviewed by the WP4 team and responses to suggested changes and amends were considered. For each feedback point a response is explained in a 'response to ecosystem feedback' report for each cycle. Based on feedback, the learning materials were improved, accessibility checks completed and final versions of the English language learning materials made available. The learning materials were then translated, as required, with further accessibility checks on these documents before publication. Final versions of Every1 learning materials were

integrated into Every1 learning pathways. Work to disseminate and promote the learning materials commenced. The impact of the learning materials is also evaluated.

Next steps and our responses to feedback were shared with stakeholders to ensure transparency and enhance collaboration. Lessons learnt from the cycle were used to improve the next iteration of learning material development and production.

2.2. Co-Creation in Every1 and WP4

Co-creation - and working collaboratively with Consortium partners and external stakeholders - was key to Every1 successfully delivering its objectives. Within the project consortium itself, careful collaboration across work packages to ensure the effective flow through and development of related activities and outputs was necessary. By extension - and as close working with stakeholders was anticipated across a wide range of activities - this also extended to work packages collaborating closely around co-creation activities. Co-creation was presented as an opportunity or "offer" to stakeholders and committed ecosystems, with an aim to open-up conversations around potential collaboration. As noted in D1.3:

> "The learning pathways and materials will be co-created together with the ecosystems in *WP3 From knowledge gaps over learning paths to identifying training material needs* and *WP4 Knowledge creation, capacity building, and training materials. The* co-creation principles and building blocks identified in this deliverable will guide the co-creation processes." (p.52, D1.3)

As noted earlier in this report (section 1.1) there is a high level of interdependency between work packages. D1.3 outlines the co-creation process for the development of online and offline learning materials. Three co-creation elements were identified (p.43, D1.3) and can be summarised as follows:

- *Understanding stakeholders*: This element was focused on the insights and knowledge gaps identified by the work of T3.1 to better understand our stakeholders and committed ecosystem needs.
- *Learning pathways:* Work package 3 (WP3) focused on working with committed ecosystems that greatly contributed to the creation of the learning pathways
- *Learning materials:* WP4 engaged with committed ecosystems to get feedback on the learning material formats, co-developed learning materials and received feedback from ecosystems on the final draft versions of these.

As outlined in D1.3, Every1 is underpinned by the ACCESS project co-creation approach (2021), which particularly focuses on how to meaningfully collaborate with "...marginalised and under-served populations" (p.20). The ACCESS project focus aligns meaningfully with that of Every1 as we have a specific remit to ensure that *all* European citizens, especially new-to-digital-energy ecosystems, are engaged with and better represented in and through the project's activities and learning materials.

The Every1 project was designed around a collaborative, democratic model where stakeholder feedback was sought and acted on regularly, from start to end. This collaborative approach, which included a focus on gender equity, was central to achieving our objectives. As outlined in D1.3, co-creation for WP4 spanned a range of activities, focusing on understanding stakeholders, developing learning pathways with WP3, and actively creating learning materials.

A key takeaway from implementing this approach was that successful co-creation was highly dependent on the availability and willingness of our committed ecosystems to participate. To address this, our strategy evolved to be flexible and sensitive to their needs. While the foundational work of identifying knowledge gaps occurred in early discussions, the core of our co-creation involved hands-on activities, particularly for the offline learning materials. We engaged directly with stakeholders through:

Tailored questionnaires: We developed and distributed specific questionnaires to ecosystems, which were customised to their organisations and particular areas of interest. This allowed us to gather precise information for materials like case studies and informational booklets.
One-on-one conversations: We held personalised online conversations with stakeholders to determine the appropriate tone of voice, content focus, and specific details to be included in the learning materials.
In-depth interviews: Interviews were a cornerstone of our co-creation process. For instance, a notable interview was conducted with a landlord who, as an individual rather than an organisation representative, provided a uniquely personal perspective on energy transition challenges. These discussions were crucial for gathering authentic quotes, information, and available photographs that stakeholders wanted to feature. Regarding the 'Empowering Tenants' case study, informed consent was obtained for both the interview content and the use of the photograph, strictly adhering to the project's ethics and GDPR protocols. These co-creation activities directly influenced the material's content, shifting the focus from organisational processes to the practical, real-world energy poverty challenges faced by tenants, ensuring the final output remained grounded in authentic stakeholder perspectives.

This direct, personal approach ensured that the co-creation of learning materials was a meaningful conversation, not a one-way process. It allowed us to move beyond broad feedback and incorporate specific, real-world examples and perspectives that enriched the final materials.

2.2.1. Ecosystem and Market Enabler Journeys

The OU instigated and chaired 10 meetings focused on co-creation, and building off the work completed for D1.3, during the Every1 project. These meetings were instigated following WP3 discussion during the Consortium meeting in December 2023. To conclude this discussion, three key questions were raised:

- How do we present the co-creation offer to committed and undecided stakeholders?
- What timelines do we have and how does this fit with work package schedules and timelines?
- What are our priority points of engagement (e.g. in relation to X). What activities are most appropriate to whom, and where?

Although co-creation is a key activity across several work packages, there was no formal co-ordination of this activity in the Every1 proposal or allocated work package. To support this work, *Ecosystem Journey* meetings were established in early 2024. The purpose of these *Ecosystem Journey* meetings was three-fold:

1. Co-ordinate and align activities to create a coherent offer(s) for committed ecosystems and other stakeholders.
2. Continue to build an informed picture of activity across Consortium which reflects stakeholder needs & aligns with project aims.
3. Share insights across the Consortium.

In addition to discussion on co-creation at the Consortium meetings in December 2023 and June 2024, ten *Ecosystem Journey* meetings (1.5-hour duration; open to all Consortium partners) took place January 2024 - September 2025. Each meeting had agenda allocation to support sharing from ecosystem contact leads and updates from work package and activity leads. From January 2025, these meetings expanded their remit to include coordination of Market Enabler activities and communications. Each meeting had a specific focus point, as follows:

1. 12 January 2024: Identifying key dates/activities for co-creation, discussing alignment of work package activity (e.g. testing, learning pathways) into coherent journey, priority co-creation points for activities.
2. 23 February 2024: Review of, and feedback on, initial timeline by partners. Unpack what co-creation looks like across the project, for different work packages.
3. 22 April 2024: Further review and discussion on timeline of work package activity. Reflections on first roundtable with committed ecosystems.
4. 15 May 2024: As work continues to evolve, revisit the meaning of co-creation for different work packages.
5. 28 June 2024: A special focus on work package 5 (WP5) activities and co-ordination/relationship of work to the project's wider communication and dissemination strategies.
6. 21 October 2024: Update and reflections on co-creation offer developed during Summer 2024 (see below) and our committed ecosystem responses to date. Updates on planned dissemination activities.
7. 8 January 2025: Discussion of activities to engage with Market Enabler stakeholders incorporated into meetings going forward. Update on co-creation and other activities.
8. 25 February 2025: Updates and coordination on a variety of activities including matchmaking, roadshow and doorstepping, learning materials. Updates on stakeholder engagement.
9. 23 April 2025: Updates and coordination from across the Consortium.
10. 23 September 2025: Review of market enabler and ecosystem interactions and how to promote our work to date, KPI review, planning for final conference.

Outputs from early *ecosystem journey* meetings included:

- A key activity early in the ecosystem journey meetings was to establish a timeline of activities. This timeline uses a cyclical approach to the development, production and testing of learning materials. As described in section 2.1 this approach provides a flexible structure to support the development of WP4 online and offline learning materials.
- Development of a Gantt chart and overview of 2024 activities developed after the June 2024 Consortium meeting to support dissemination and communication activities (WP5). This overview of activities from the grant agreement incorporates and reflects planned committed ecosystem and market enabler events, such as showcases, as well as identifying other opportunities (e.g. webinars, case studies) which could be relevant to co-creation activities.
- Closer working between committed ecosystem contacts and work packages to ensure that messaging, timetabling and our offer are coherent, and we do not overload, duplicate or present project activities in a disorganised or inconsistent fashion.
- A focused meeting for project partners to discuss co-creation and share insights from discussions with committed ecosystems. This is particularly important as not all project partners or work package leads participate in all project meetings.

2.2.2. Co-creation in practice

As described in the introduction to this section (2.2) and in D1.3 there are three elements to co-creation, two of which are applicable to the development and testing of learning materials. Our work to date in relation to both elements can be summarised as follows:

- The first element (*understanding stakeholders*) is core to both WP3 and WP4 work and refers to work conducted by work package 1 (WP1) and expanded by WP3 as more ecosystems committed to Every1 in Spring/Summer 2024. The outcome from this work is a range of knowledge gaps which both WP3 and WP4

used to inform the development of the learning pathways and learning materials, respectively. In practice, and due to timelines, WP3 and WP4 simultaneously used this information to develop the learning pathways for level one (WP3) and shape the focus of learning materials (WP4).

- The third element (*learning materials*) refers to co-creation with committed ecosystems throughout the learning material development process. Co-creation input here refers to feedback on the format of learning materials, collaboration with Every1 project partners to produce learning materials and feedback on final draft versions. Feedback on the final draft versions was built into our cyclical approach to development and production (and includes showcases of learning materials, in addition to testing activity such as interviews and surveys). In addition, we received feedback on formats via the *understanding stakeholder* activities. Early on in our work, an important focus was to better understand what producing learning materials in collaboration with our project partners might look like.

The development of offline materials, particularly the case studies, is a prime example of our co-creation principles with external stakeholders in action. Our approach was to ensure these materials were not just about our stakeholders but were developed in close collaboration with them, fostering a sense of ownership and relevance from the outset. The process involved several key steps:

- **Selection & expert interviews**: We began by carefully selecting energy communities whose experiences aligned with our project's objectives. The EWORX team then gathered primary insights through consultations with subject matter experts from these communities, ensuring their practical knowledge was at the core of the material.
- **Information gathering & adaptation**: We blended desk research with primary data collection, including conducting interviews with key stakeholders to gather both quantitative and qualitative data. This collaborative approach allowed us to adapt the information into engaging and informative case studies that highlight the practical, real-world experiences and diverse approaches of these communities.
- **Production process**: The co-created content then moved into a rigorous production process. This involved detailed content curation and creating a well-structured table of contents to ensure a logical flow. The EWORX design team created visually appealing layouts with informative graphics and an accessible design, transforming the content into a high-quality, professional resource. Thorough editing and factchecking were performed to guarantee accuracy and relevance.

This rigorous process—encompassing stakeholder selection, expert interviews, mixed-methods information gathering, and quality-assured production by the EWORX design team—is evidenced by the resulting nine case studies (see Table 6).

This direct and personal approach transformed the creation of learning materials into a meaningful conversation rather than a one-way process. It allowed us to move beyond general feedback and incorporate specific, real-world examples and perspectives, which enriched the final materials. The following section focuses on discussing two specific points at which we had direct contact with committed ecosystems and external stakeholders. The first are the online events or *showcases*, of which five were held over the course of the project. Both rely on working collaboratively with committed ecosystem lead contacts within the Consortium, who are key points of contact for our committed ecosystems and market enablers.

2.2.3. Learning Material Showcases

Key to ongoing dialogue with committed ecosystems - and later market enablers - were *showcases* of learning materials. As seen in section 2.1 one showcase is scheduled per each learning material production and development cycle. Five showcases took place during the project duration. All ecosystems were invited to each showcase. Each showcase was accompanied by a testing document which overviewed the learning materials available for testing. Cycle six, which was introduced later, focused largely on learning materials that had a specific audience (e.g. secondary school learners) and did not have a showcase. For cycle six directly approaching participants or incorporating testing directly into learning material delivery (in the instance of webinars, for example, this was done through Mentimeter polls) was deemed more effective. To support the latter, a testing document was provided. The five showcases can be summarised as follows. The testing component of the showcase webinars is explained in more detail in section 4.1.2.1.

Showcase One (15 April 2024)

This meeting combined updates from two work packages (WP3 and WP4) in a 1.5-hour long session. It provided an update on the Every1 search tool before presenting the 11 learning materials that had been created as part of cycle one thematically. The four groupings used to present the online and offline materials were: Energy digitalisation, energy communities, young adults and children and reusing Every1 learning materials. Prior to this, a short overview of the testing process and “ask” was provided and, as each learning material was presented, ecosystems were encouraged to express an interest in testing.

Feedback from ecosystems via contact leads was solicited post-session. This feedback (e.g. session length) was used to improve and shape the next showcase.

Showcase Two (25 September 2025)

This meeting was 1-hour long and comprised of a “you said, we did” segment which summarised headline feedback on cycle one learning materials and what steps would be taken to address these issues; presented the cycle two learning materials (6 in total) and explained the testing process; and presented co-creation opportunities and gave an opportunity for discussion and questions.

Showcase Three (15 January 2025)

This was originally scheduled for November 2024. However, several other co-creation opportunity events (e.g. learning pathways) are planned for this period. In addition, the festive break meant that there would potentially be too big a gap between the showcase and planned testing. Showcase three was therefore held in January 2025 and was a 1-hour session which incorporated *you said, we did,* cycle three learning materials (11 in total), an update on translation plans and invitation to participate, and a reminder of co-creation opportunities.

Showcase Four (27 March 2025)

As per previous showcases this 1-hour session included *you said, we did* and a presentation of cycle four learning materials (16 in total). The invitation to co-create included a video by Flux50, which shared their experiences of co-creating learning materials. In addition, the session included a 20-minute segment of live testing and feedback on a slide deck.

Showcase Five (26 June 2025)

As per previous showcases this 1-hour session included *you said, we did* and a presentation of cycle five learning materials (20 in total). In addition, WP3 demonstrated the new learning pathways tool and there was a dedicated segment for live testing and feedback on an online game.

Further reflections on the showcase approach to testing can be found in section 4.1.2.1.

2.2.4. Development of a co-creation offer

In summer 2024, in-depth work to develop a co-creation offer for committed ecosystems commenced. This work focused on looking at ways in which committed ecosystems could contribute directly to the development and authoring of both the online and offline learning materials. By combining efforts, this mitigates against duplication of efforts and ensures that committed ecosystem contributions are used effectively. In addition to insights from regular *ecosystem and market enabler journey* meetings, close collaboration with Consortium contact leads was required to better understand our stakeholders and the potential of, and appetite for, these types of activities. From cycle one feedback onwards, it was clear there was an appetite amongst some reviewers for being involved in this type of activity going forward.

Following a review of Every1 learning material formats, seven different potential co-creation opportunities were highlighted from the grant agreement list of learning materials, as follows:

1. A minimum of 15 Case Studies explained in short and attractive videos, accompanied with explanatory material and inspired by the successful Harvard Case Studies.[1]
2. Up to 2 Massive Open Online Courses (MOOCs), which will be delivered in cooperation with EDDIE project of which ICCS (NTUA) is partner.
3. An active online capacity building community.
4. At least 2 sets of course material for secondary schools in all European languages, adapted to the local context and including guidance for teachers.
5. An expected set of 15 on-demand slide decks and training guide for specific categories of companies.
6. At least 4 different sets of “information and engagement packages” for cities, communities or ecosystems, targeting a diverse type of stakeholders, and offered in up to 12 languages.
7. Engaging case study descriptions (minimum 8), with layered detail provided in printable format and provided in at least 8 languages.

These learning materials provided the most obvious potential opportunities for direct input from stakeholders into their creation and authoring. Case studies and secondary school materials were highlighted as priority resources for stakeholder input. Case studies provide an opportunity for structured showcasing of individual stakeholders, as real-world exemplars. Secondary school materials were another priority due to limited direct experience within the Consortium of working with these stakeholders, and awareness of committed ecosystems who work within the secondary school context.

[1] https://hbsp.harvard.edu/cases/

Over Summer 2024, and working with committed ecosystem contact leads, we reviewed and aligned our committed ecosystems to potential learning materials formats and topics. We also devised a wide range of potential ways in which committed ecosystems – and later Market Enablers – could contribute to learning material development. Potential activities included completing a structured template to provide information on their organisation and specific areas/questions of interest, participating in a short interview, contributing to a panel session to explore a particular topic and more in-depth work such as co-developing a detailed case study. As a first step, it was agreed to circulate an email to committed ecosystems, inviting and informing them of collaborative opportunities. This email provided background on the project's learning material development, the benefits of getting involved in Every1 case study development and highlighted the flexible and responsive way the project was approaching co-creation. This message was sent w/c 16 September 2024, ahead of the learning material showcase on 25 September 2025, and during which there would be opportunity to discuss the offer further and ask questions.

> "We are producing our case studies and secondary school course materials in different ways including short interviews, the opportunity to participate in a webinar discussing current topics and trends, and written case studies which explore your response to challenges concerning the digital energy transition, as well as comprehensive resources for secondary school students with practical applications." (Extract of email sent to committed ecosystems w/c 16 September 2024)

This resulted in two committed ecosystems reaching out to the project to express an interest in these opportunities. Other potential collaborators were also identified through *ecosystem and market enabler journey* meetings, and Consortium lead contacts reaching out to connect us to relevant stakeholders. The following table summarises the type of organisation, co-creation activity and related learning materials:

	Type of stakeholder	Description of co-creation activities	Related learning material / output	Cycle
1	Energy community	We developed and distributed tailored questionnaires and conducted one-on-one online conversations and in-depth interviews. This approach was used to gather authentic quotes, photographs, and specific information on their initiatives and challenges.	The Collective Energy Coop Story	4
2	Energy community	Same process as above.	Energi Akademiet - A Model for Community-Led Sustainable Energy Transitions	5
3	Energy community	Same process as above.	Hyperion: A pioneer in Community Energy	1

4	Energy community	Same process as above.	Energy: The Hindelang Cooperative Case Study	3
5	Individual (Landlord/ Homeowner)	We conducted an in-depth interview with an individual landlord to gain a uniquely personal perspective on energy transition challenges, which was crucial for creating relatable content for non-organisational stakeholders.	Empowering Tenants for Energy Reduction- A Win-Win in Digital Transition	6
6	Cluster organisation	We developed a co-creation offer and engaged with them through interviews and tailored conversations to understand their needs for digital energy solutions and efficient business practices.	Implementing Digital Technologies for Energy Management (Flux50)	3

Lessons learnt from our co-creation activities included:

- **Incentivisation is key.** While some stakeholders appreciated the promotion of their work through the Every1 project, several potential co-creators raised questions about financial compensation. Ensuring organisations are appropriately incentivised, such as through payment for their time and contributions, could significantly boost engagement and participation in these activities.
- **Thorough research is essential before making contact.** We learned the importance of carefully researching an organisation's mission and current work before reaching out. This allowed us to tailor our co-creation offer to their specific interests and priorities, demonstrating that we understood their needs and valued their expertise.
- **Understanding stakeholder strategy is crucial.** The most successful collaborations stemmed from recognising and aligning with a stakeholder's strategic goals. For example, some organisations were motivated by the opportunity to promote their work, while others sought to validate their initiatives, create training material for internal purposes or gain new insights. Tailoring our approach to these different motivations helped secure their commitment.
- **Direct communication yields the most valuable content.** The tailored questionnaires proved highly effective for gathering specific information and direct quotes, which significantly enriched the learning materials. This method allowed stakeholders to provide precise details about their initiatives, challenges, and successes in their own words.
- **Flexibility is necessary for successful engagement.** We learned that a one-size-fits-all approach doesn't work. Being flexible in our methods—whether through in-depth interviews, one-on-one conversations, or customised questionnaires—allowed us to accommodate the diverse needs and busy schedules of our partners, ultimately leading to more fruitful collaborations.

2.2.5. The ladder of co-creation of learning

The ACCESS Consortium's *Principles into practice: Co-creation of learning in complex and challenging environments* Discussion Guide and Toolkit (Charitonos, Hoggart, Jones, Keogh & Scott, 2021) was identified by D1.3 as particularly relevant for the Every1 co-creation context due to its focus on marginalised and hard-to-reach groups. The toolkit provides *The ladder of co-creation of learning* which supports reflection on what co-creation means within different contexts. An amended version of the ladder is shown below. A blue arrow has been added to indicate our initial anticipated level of co-creation with committed ecosystems. This was selected based on the intended level of co-creation outlined in D3.1 (https://every1.energy/pubreports/identifying-knowledge-gaps-and-capabilities-all-stakeholders) and elsewhere.

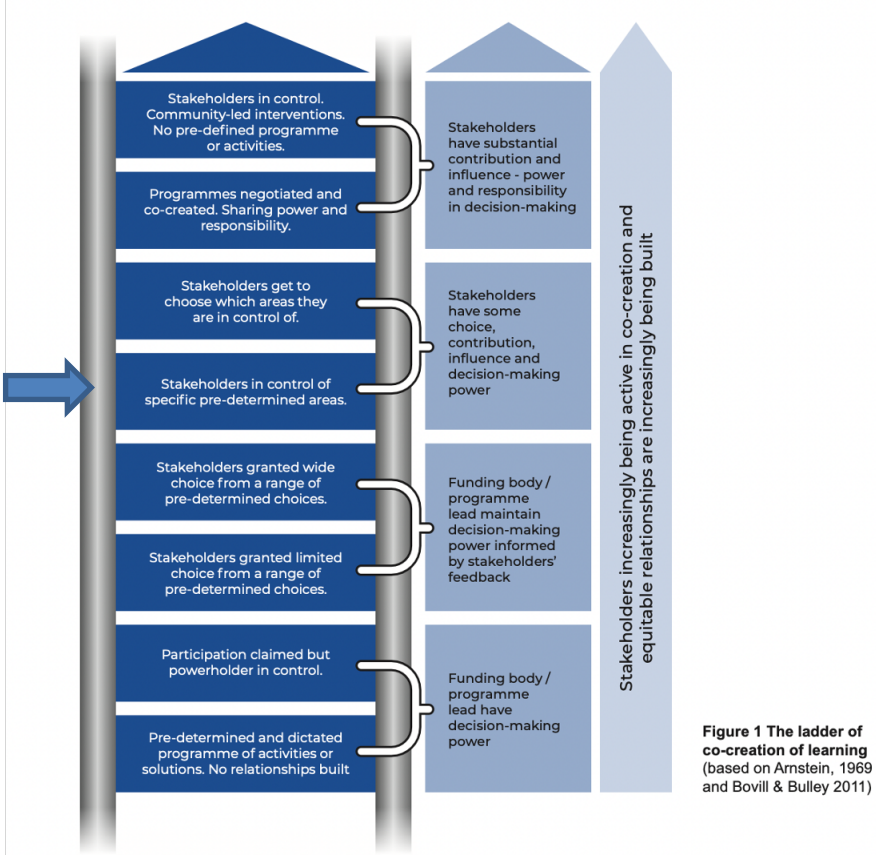

Figure 1 The ladder of co-creation of learning (based on Arnstein, 1969 and Bovill & Bulley 2011)

Figure 1: The ladder of co-creation of learning by the ACCESS Consortium is licensed CC BY-NC-SA 4.0 and has been modified (addition of blue arrow).

The blue arrow indicates our initial anticipated level. In practice, our level of co-creation was variable: we operated consultatively for broad dissemination activities (surveys and webinars) but reached collaborative levels for the production of bespoke offline materials (e.g., the co-authored 'Empowering Tenants' case study). This flexibility was a strategic necessity to align with the diverse time and expertise constraints of our committed ecosystems.

As described in section 2.2.4, our co-creation offer was multi-faceted and flexed to be responsive to diverse stakeholder needs and availability. Negotiation and discussion were key; this flexibility meant that deepening the level

of ecosystem involvement, or alternatively supporting their participation through less open, more predetermined offers, was always a possibility to ensure meaningful engagement.

2.3. Universal Design for Learning (UDL)

In addition to the activities discussed in previous sections, to ensure that Every1 learning materials met the needs of diverse stakeholders across Europe, with a wide variety of learning needs and preferences, the project applied Universal Design for Learning (UDL) principles. Universal Design for Learning (UDL) aims to support "...learner agency that is purposeful & reflective, resourceful & authentic, strategic & action-orientated" (CAST, 2024).

UDL is focused on supporting a diversity of learners through foregrounding equity in learning design. It is structured by three principles and nine guidelines to help support the development of learning materials. The following table (Table 2), which is based on the *Universal Design for Learning Guidelines*, gives an overview of UDL principles and design guidelines and provides examples of how Every1 learning materials and approaches align with UDL principles.

	UDL Principle		
	Design multiple means of engagement	**Design multiple means of representation**	**Design multiple means of action/expression**
Access	**7: Welcoming Interests & Identities** *Consortium co-development of a range of personas by WP3; course materials reflect a diversity of motivations; board games for children, secondary school materials and online games encourage creativity and play.*	**1: Perception** *Online courses downloadable in different formats and screen reader compatible; final versions of videos will be subtitled; diverse course author teams and examples from across Europe used.*	**4: Interaction** *Online and offline versions of some materials available; online courses downloadable in different formats and screen reader compatible; range of formats being produced; Every1 accessibility guidelines produced to support development of all learning materials.*
Support	**8: Sustaining Effort & Persistence** *Clear learning outcomes; use of open badging for online courses; self-paced online courses; Every1 community of practice (capacity building community); providing a range of real-world examples and challenges.*	**2: Language & Symbols** *Appropriate terminology used according to level of learning material; terminology is explained appropriately in learning materials and glossary being produced as an additional resource; wide range of multi-media produced; diversity in examples and images used in learning materials; localised examples and terminology to be used in translated versions of learning materials; captions & subtitles in videos.*	**5: Expression & Communication** *Opportunities to explore a range of learning materials on the digital energy transition, facilitated by the Learning Pathways tool.*
Executive Function	**9: Emotional Capacity** *Reflective activities included in learning materials; care for others encouraged in courses such as* Energy Anxiety; *increasing confidence through quizzes.*	**3: Building Knowledge** *Harvard case study inspired online videos & learning materials encourage critical reflection on real-world challenges, potential to include student co-creation activities as part of some learning*	**6: Strategy Development** *Planning support will be provided in future learning materials (e.g. online game for energy community); quiz feedback in online courses*

		materials; provision of learning materials in different formats.	

Table 2: Universal Design for Learning (UDL) principles and design guidelines and examples from Every1 learning materials.

2.4. Translation

For the translation of learning materials, a flow was set up where translations were foreseen based both on maintaining a spread of European languages and demand based by ecosystems and partners requesting translations. Demand based requests could come from any source, with the two main sources being ecosystems already in our network, and partners doing outreach in languages other than English. Outside of the demand driven translations the other translations were based on the requirements set in the proposal of the Every1 project.

Learning materials are all initially developed in English to ensure all consortium partners could provide feedback or contribute where necessary. THNK translated all English versions with the DeepL translation tool. After the use of the DeepL translation tool the translations were run through ChatGPT to check language consistency. Any inconsistencies detected in the translations were then manually adapted by THNK, as well as reconstruction of the lay outing when this had been lost in the translated files.

The OU provided translations in both PDF and Word format (the latter to support potential remix of the learning material) on OpenLearn Create, alongside the English language version of learning material. Before publication of translations, a further series of quality checks including accessibility and anonymisation of files were also carried out by the OU.

The EWORX team coordinated the translation of offline learning materials, providing them in both PDF and editable formats to support local adaptation and remixing. The translation workflow involved machine translation, consistency checks, and a mandatory final review by a native speaker of the target language. Prior to publication on the Every1 Knowledge Hub, all materials underwent comprehensive quality assurance, including internal proofreading, content verification, and a final audit to ensure compliance with the project's accessibility standards (WCAG 2.1 AA).

Some materials (see table below) were translated into 23 European languages. For others (see table below) a focus was put on 8 languages or 12 languages. It was chosen to keep the 8/12 focus languages the same across all materials, in contrast to an approach where we try to spread this out between the languages. This choice was made to enable the project to deliver a more comprehensive offering in these 8/12 languages rather than smaller offerings across 23 languages. The 8/12 languages were chosen based on number of speakers, a geographical spread, the languages spoken in our committed ecosystems and the language capacities of the consortium. This resulted in the following 8 focus languages:

- German
- French
- Italian
- Spanish
- Polish
- Romanian

- Dutch
- Greek

These 8 languages were complemented with the following 4 languages to form the group of 12 focus languages.

- Portuguese
- Hungarian
- Swedish
- Czech

On the next page an overview can be found of the materials that are translated and into which languages. In total 528 translations are made available through the Every1 project. As our materials are licenced under a CC BY-SA 4.0 license, people or organisations outside the consortium are free to make their own translations of these materials.

Name	Translated																						
	German	French	Italian	Spanish	Polish	Romanian	Dutch	Greek	Portugese	Hungarian	Swedish	Czech	Bulgarian	Danish	Estonian	Finnish	Irish Gaelic	Croatian	Litvanian	Latvian	Maltese	Slovakian	Slovenian
What is the Digital Energy Transition and why is it important?	+	+	+	+	+	+	+	+	+	+	+	+											
Cybersecurity in the Digital Energy Transition	+	+	+	+	+	+	+	+	+	+	+	+											
What is an energy community and why should I join?	+	+	+	+	+	+	+	+	+	+	+	+											
I and E Package 1- Your Home-Your Energy 2nd Draft + FAQ + Poster	+	+	+	+	+	+	+	+	+	+	+	+											
I and E Package 2- Energising the Energy Community-1st Draft + FAQ + Poster	+	+	+	+	+	+	+	+	+	+	+	+											
Information and Engagement Package 3- Empowering the Education Sector + F	+	+	+	+	+	+	+	+	+	+	+	+											
Empowering Businesses A Practical Guide for Energy Community Members Inf	+	+	+	+	+	+	+	+	+	+	+	+											
European Islands of Innovation Case Study Copy	+	+	+	+	+	+	+	+															
Flux 50-Case Study-Final draft cs	+	+	+	+	+	+	+	+	+	+	+	+											
Hyperion-A Pioneer in Community Energy	+	+	+	+	+	+	+	+															
Implementing Digital Technologies for Energy Management (Flux50) Case Stud	+	+	+	+	+	+	+	+															
Digitalisation and Sustainable Mobility-The EU Policy Framework	+	+	+	+	+	+	+	+															
Empowering Tenants for Energy Reduction- A Win-Win in Digital Transition	+	+	+	+	+	+	+	+															
Energi Akademiet - A Model for Community-Led Sustainable Energy Transitic	+	+	+	+	+	+	+	+															
Hindelang Cooperative Case Study	+	+	+	+	+	+	+	+															
Clean Energy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Demand Response	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Energy Anxiety	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Energy Communities	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Energy Flows	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Energy Information and Critical Literacy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Energy Privacy Safety Security	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Energy Use	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Prices Tariffs	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Smart Devices	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
What is the Digital Energy Transition	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Why Digitalize Energy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Circularity and the Digital Energy Transition	+	+	+	+	+	+	+	+	+	+													
Cybersecurity digital energy myths... Busted!	+	+	+	+	+	+	+	+	+	+													
Digital Energy Basics For Journalists	+	+	+	+	+	+	+	+	+	+													
Energy Communities IT Basics	+	+	+	+	+	+	+	+	+	+													
Energy Myths Busted!	+	+	+	+	+	+	+	+	+	+													
Get involved in the Digital Energy Transition - 9 easy steps for homeowners and	+	+	+	+	+	+	+	+	+	+													
Get involved in the Digital Energy Transition - Occupants.EasySteps	+	+	+	+	+	+	+	+	+	+													
Helpful Tips, Tricks and Tools...To support setting up your energy community	+	+	+	+	+	+	+	+	+	+													
How does Climate Change impact Renewable Energy	+	+	+	+	+	+	+	+	+	+													
Saving energy and making your business more energy efficient	+	+	+	+	+	+	+	+	+	+													

Table 3: Overview of Translations

3. Online and Offline Learning Materials

51 online and 36 offline learning materials in 16 different formats were produced during the Every1 project. Following testing and further improvements to these English language learning materials, a total of 528 translated files were made available, in 23 European languages total (see section 2.4).

As noted in section 2.3 Every1 was committed to applying UDL principles throughout the creation of the project's learning materials and pathways. In this section, we focus on presenting our approach to different facets of Every1's learning material development process. We present aspects of the production process, which build on the PDCA cycles presented in section 2.1.1 and the standards and guidelines given to course authors as part of the support for creators of the *Digital Energy Essentials* (DEE) courses (see section 3.9).

The reason for this approach is two-fold. First, the course author training for the DEE courses – which were the first online learning materials to be produced - summarises the standards and processes for Every1 learning material development more broadly. Second, the methodology used to support collaboration across the Consortium can be adopted to develop both online and offline learning materials going forward. Finally, we present overviews of both online and offline learning material formats and progress to date on these.

In brief, Every1 online and offline learning materials are based on:

- Extensive desk research, Consortium knowledge sharing and feedback from our committed ecosystems on knowledge gaps in existing learning materials on energy digitalisation (T1.3 & T5.3). Associated publications include D3.1 *Identifying knowledge gaps and capabilities for all stakeholders* and D1.1 *Extended Stakeholder and Ecosystem Mapping*. These learning needs informed our focus and audience and were mapped onto learning material types. As the project sought to support to engage everyone in the digital energy transition, learning materials addressed a wide range of audience needs including the general public, SMEs, market enablers, local authorities, municipalities, cluster organisations, non-technical audiences, etc.
- The catalogue of existing energy digitalisation learning materials, which was developed as part of WP3, and which provided potential openly licensed materials that could be remixed by WP4. WP3 also conducted extensive learning personas work with Consortium partners, which deepened our understanding of the potential diversity of audiences and their needs.
- The types of online and offline learning materials listed in the Grant Agreement.
- Content and production expertise in the Consortium.

3.1. Expertise on the Digital Energy Transition

Learning materials were created by subject experts within the Consortium and have drawn on a range of sources to ensure that content is accurate, relevant, up-to-date, evidence-based and appropriate for the intended audience. These sources included:

- **Academic literature:** This includes peer-reviewed journal articles, books, and conference proceedings, providing a theoretical grounding for the learning materials.
- **Industry reports:** Reports and publications from recognised industry bodies, consultancies, and expert agencies, provided insights into current and future energy industry trends. For example, the International Energy Agency (IEA) openly licensed reports and articles on energy digitalisation topics provided up-to-date expert, trusted resources for remixing into Every1 learning materials.

- **EU sources:** Official reports, policy documents, and legislation from the European Commission and related institutions, ensuring alignment with European Union frameworks and initiatives. The European Commission's openly licensed blog posts and articles were remixed into several Every1 learning materials.
- **News articles and media:** Articles and reports from reputable news sources and media outlets, providing up-to-date information and real-world examples.
- **Co-creation:** Working with stakeholders to co-create learning materials ensured that up-to-date, real-world examples were incorporated.

This multi-source approach ensures the learning materials are comprehensive, relevant, and grounded in both theory and practice. Where relevant resources are mentioned in the specific learning materials that make use of them.

3.2. Learning material creation considerations

The creation of Every1 learning materials was guided by a learner-centred approach, understanding of learner preferences and needs and the application of UDL principles. This approach involved careful consideration of several key factors:

Learner characteristics

Learning materials **were created** to support three distinct knowledge levels:

- **Level 1 (Introductory/New to Digital Energy)**: Materials used clear, accessible language to foster engagement.
    - *Example Format: Digital Energy Essentials* courses (e.g., *What is the digital energy transition?*) or Information Booklets.
- **Level 2 (Familiar/Intermediate)**: Materials addressed more complex ideas while maintaining clarity.
    - *Example Format:* Case studies about energy communities (e.g., *The Collective Energy Coop Story*)
- **Level 3 (Expert/Technical)**: Materials delved into more complex concepts and terminology.
    - *Example Format:* Content focused on specific market dynamics or MOOC segments (e.g., *The European Energy Market*)

Learner needs and tone (friendly, inclusive) were determined from stakeholder insights gathered during co-creation activities (see Section 2.2) and foundational knowledge gap work. This qualitative data ensured that the tone adopted was appropriate to engage diverse, hard-to-reach audiences.

Content Presentation and Terminology

- **Consistency**: **UK English** was used consistently throughout all materials to ensure clarity and uniformity. Terminology control was enforced through internal review checks and will be supported by the **Glossary** (see Table 6).
- **Structure**: The structure of each resource type explicitly factored in elements like sections, tips, acknowledgements, activities, and quizzes (where applicable) to enhance learning and engagement.

Diversity, Equity and Inclusion (DEI) and Accessibility

- **DEI Checks**: Materials were subject to internal checks to ensure they were inclusive, reflected the diversity of target audiences, and promoted gender equality.
- **Accessibility**: Accessibility guidelines were followed to ensure materials were usable by individuals with disabilities. Key checks included the use of clear fonts, sufficient colour contrast, and alternative text for images. This approach aligns directly with the standards outlined in the *Every1 Accessibility Guide* (see Section 3.5).

Collaboration and Open Licensing

- **Co-creation and Feedback**: Opportunities for co-creation were embedded throughout the development process. Insights from committed ecosystems ensured the final drafts were user-validated (see Section 2.2.2).
- **Reusing Open Content**: When existing openly licensed materials were utilised, only content licensed under conditions compatible with the project's requirements, primarily **CC BY-SA 4.0**, was accepted. Attribution was formally recorded using the **TASL** format (Title, Author, Source, License) and tracked via the project's Asset Tracker. This rigorous process was followed to lower reuse friction for external stakeholders.

This learner-centred approach ensured the creation of high-quality, engaging, and accessible learning materials that effectively addressed the needs and preferences of diverse stakeholders in the energy transition.

3.3. Progressive Learning

The learning materials are designed to follow a gradual learning technique, enabling users to progressively build their knowledge and skills. This approach is facilitated by:

- **Thematic Units:** The materials are divided into distinct sections, each focusing on a specific theme or topic, or a combination of the above but within the established focus. This allows users to learn at their own pace and focus on areas of particular interest or need.
- **Layered Complexity:** Within each section, information is presented in layers, starting with foundational concepts and gradually increasing complexity. This ensures users can grasp fundamental knowledge before moving on to more advanced topics.
- **Case Study Integration:** Case studies, such as those developed in collaboration with WP3, are integrated throughout the materials to provide real-world examples and illustrate key concepts in practice. This helps users connect theoretical knowledge to practical applications and enhances their understanding of complex topics.
- **Interactive Elements:** The materials incorporate interactive elements, such as quizzes (with automated feedback) and exercise activities to reinforce learning and provide opportunities for active engagement. This helps users test their knowledge, apply concepts, and receive immediate feedback on their progress.

3.4. Design Elements and Visual Style

The design elements and visual style of the learning materials play a crucial role in engaging the target audience and effectively conveying information. The design of these materials adheres closely to the established style guide of the Every1 project, ensuring a cohesive and professional look throughout all materials. Consistent use of typography, colour schemes, and spacing contributes to a clear, polished presentation. Additionally, graphic elements such as icons, infographics, and images have been strategically integrated to support the content and improve user engagement. These visual components not only break up dense text but also enhance understanding, creating a more dynamic and accessible reading experience that aligns with the project's overall aesthetic vision.

Key Design Considerations

- **Accessibility:** The materials are designed to be accessible to learners, including those with disabilities. Learning materials use clear fonts, sufficient colour contrast, and alternative text for images.
- **Visual appeal:** The materials are visually appealing and engaging, using high-quality images, graphics, and layouts to enhance the learning experience.
- **Clarity:** The materials are designed to be clear and easy to understand, using concise language and avoiding jargon.
- **Consistency:** The materials maintain a consistent visual style and branding across different formats, ensuring a cohesive and professional look.

Specific Design Elements

- **Openly licensed images:** High-quality images with Creative Commons licenses were utilised to enhance the visual appeal and engagement of the learning materials. Whilst a range of general energy related images were available on an open license (e.g. from Flickr), finding specific, local example or more specialist images required a more flexible approach or the development of vectors and other visual elements by the project. For future projects, building in co-creation with partners to develop sets of openly licensed images for wider sharing and use in learning materials would be beneficial.
- **Customised vectors:** Customised vector graphics were created to illustrate key concepts and data in a clear and concise manner.
- **Diagrams and visual elements:** Diagrams and other visual elements were incorporated to support the content and improve comprehension, adhering to accessibility guidelines.
- **Project branding:** The design elements and visual style of the materials align with the Every1 project's branding guidelines (use of project and other logos and funder statements), ensuring consistency and a professional look across all resources.
- **Attribution statement:** Every1 learning materials are openly licensed (section 3.7) and the inclusion of all assets including openly licensed images were appropriately acknowledged, including through use of good practice attribution practices (e.g. TASL).

This approach ensured the learning materials are visually appealing, accessible, and effectively convey information to a diverse audience.

3.5. Accessibility

Ensuring that Every1 learning materials are accessible is a key consideration throughout the development, production and testing processes. As illustrated by the examples noted in section 2.3 *Universal Design for Learning (UDL)* Every1 is actively engaged in a range of activities that support the accessibility of Every1 learning materials.

To support Every1 Consortium course authors and production teams in creating accessible online and offline learning materials, an accessibility expert at the OU led the development of an openly licensed *Every1 Accessibility Guide* in Summer 2024. This guide was updated and publicly shared in April 2026 as part of the Every1 OER Remix Toolkit that supports reuse of Every1 learning materials (D5.3).

3.6. Quality Assurance

The creation of Every1 learning materials utilised a range of quality assurance mechanisms, at various stages of development. As seen in section 2.1.1 the *Check* stage of learning material development is three-fold and includes review of learning materials by both subject experts (with an aim, where possible, of at least two within the Consortium, as per the project's standard review processes) and ecosystems (via testing, see chapter 4). In addition, learning materials needed to comply with project and platform standards and requirements. The OU, for example, has its own editing, quality, rights and accessibility checks built into the production of learning materials that are hosted on OpenLearn Create.

After an Every1 learning material draft was produced, it was proofed, edited and checked for terminology and language consistency (e.g. use of UK English, appropriateness of language for the audience/level), checked to ensure that learning outcomes are met, reviewed for gender equity and to ensure that examples and images used are diverse and inclusive. Learning materials were also checked to ensure that they meet accessibility requirements. Video transcripts were checked and corrected, where necessary. These editorial quality checks on pre-tested learning materials are conducted by OU and EWORX, for the online and offline learning materials, respectively.

3.7. Open Licensing

In addition to publishing open access the project had a commitment to publishing its learning materials on an open license. This ensured that Every1 learning materials can be easily reused and potentially localised by a wide range of stakeholders. Testing of the learning materials revealed that contextual specificity and local, relevant examples were a key concern for stakeholders. Openly licensing our learning materials, alongside our supporting materials and activities to encourage reuse, were therefore key elements of the project's sustainability strategy.

After a discussion and review of open licenses, supported by the presentations for Every1 consortium course authors in March 2024 (which incorporated an overview of open licenses and activity to find open images) and earlier discussions and presentations on open licensing, the Consortium agreed that the Creative Commons CC BY-SA 4.0 license (https://creativecommons.org/licenses/by-sa/4.0/deed.en) should be applied to Every1 learning materials. CC BY-SA 4.0 was agreed to be the most appropriate open license as it enables commercial reuse of Every1 learning

materials (which was considered important within some contexts) whilst requiring any remix, localisation and adaptation of an Every1 learning material to be licensed on the same Creative Commons license as the original resource. This ensures that any adaptations of Every1 learning material will not have more restrictive licenses applied to them (such as those with an ND or no-derivatives license).

Every1 learning materials have also reused existing openly licensed content. Reuse has been primarily through the inclusion of openly licensed images in learning materials (particularly in the *Digital Energy Essentials* courses where a high number of images were needed to make the courses visually appealing) but also by using quality, existing content (such as from the International Energy Agency) which provided clear, up-to-date material on key topics. Final versions of learning materials will be made available in formats that support reuse, where possible.

The project was committed to produce support for localisation as part of WP5 (D5.3 *Training on re-use, re-mixing and adapting of capacity building material*), for delivery in December 2025, and in WP4 through the production of *Video training on how to adjust, re-use and alter the provided learning material* and the *Training guide on how to develop capacity building material on this topic, using Every1 and other available material.* A suite of training materials was developed to support reuse including three videos, which were shared earlier than planned, an openly licensed *Accessibility Guide* and a bank of openly licensed images used in our learning materials. A final webinar focused on remixing of Every1 learning materials took place on 29 January 2026. The Every1 OER Remix Toolkit, which brings together all these resources, was released in April 2026.

The reason for our early engagement with stakeholders was three-fold. First, to raise awareness of open licensing and what this means within the context of Every1. Second, to give an opportunity to receive feedback on the training materials themselves. Third, by raising awareness of Every1 learning materials as open educational resources (OER), and in conjunction with the release of final versions of learning materials that began from end of 2024 onwards, it was considered sufficient time to support potential adaptation and remix of Every1 learning materials within the project duration.

3.8. Learning material formats

Whilst learning material format types were pre-agreed in the Grant Agreement - and varied to accommodate a wide range of learner preferences – co-creation and knowledge gap activities provided insights into stakeholder format preferences that were incorporated wherever possible.

Responsibility for individual learning material formats was dependent on both production and content expertise. Consequently, there were different leads for the production and/or course content for each learning material. For example, THNK produced all three of the online games, whilst the OU utilised Articulate for the *Digital Energy Essentials* suite on OpenLearn Create. OU and EWORX oversaw the overall management and delivery of online and offline learning materials, respectively, within WP4 (T4.1 & T4.4).

For remix purposes, the project will provide – wherever feasible – alternative formats of a learning material to support reuse. For example, PDF content will be provided in a Word and/or RTF format.

Table 4 provides an overview of learning materials including the format type and production and context expert leads.

3.9. Overview of online learning materials

Table 4 overviews all online learning materials, format types, leads and cycles of development and production. As noted earlier, some learning materials were developed over several cycles. All learning materials are available via the Every1 Knowledge Hub, with some materials (such as videos) hosted on third-party platforms (e.g. YouTube). Initially, the development of the online learning materials focused particularly on the *Digital Energy Essentials* (DEE) suite of courses, which are available via The Open University's (OU) OpenLearn Create platform. These courses were prioritised as they are aimed at the general public, are of short duration (30 minutes) and provided a foundational set of materials to support WP3 learning pathway development.

To structure the development of online learning materials, the OU utilised sprint methodologies. This rapid and iterative way of producing the DEE courses provided a time-bound and structured approach to production. Initially, a brainstorm with Consortium partners took place in January 2024 to identify topics for the 12 courses and brainstorm the focus of each course. One-liner overviews of each course were also developed. Partners aligned their expertise and interest against the proposed course overviews that was shared with the wider WP4 team.

Creating a supportive authoring environment and processes were key to progressing the DEE courses. Whilst the Consortium has a lot of subject expertise, the highly collaborative approach and sprint methodologies deployed aimed to ensure that course authors, who were often new to course authoring and course development, felt supported throughout a structured period. Support included:

- Two course author sessions were held on 4 and 13 March 2023 by the OU. These sessions overviewed the requirements (timelines, topic selection background, creation considerations, accessibility, branding and format plus review processes) for courses as well as providing a briefing on open licensing. An activity to find openly licensed images, which contributed to the asset bank of openly licensed images for the courses, was also included.
- In addition, the OU initially drafted an exemplar course *What is the digital energy transition?* to provide course authors and partners with an example course, and to give an example of scope and tone.
- Each course had a template to help structure the course development and ensure consistency across the courses. This included notes regarding the course one-liner, suggested course coverage (brainstorm) and suggested learning outcomes.

More specifically, the *Digital Energy Essentials* course sprints were structured as follows. This 4-week period was flexible enough to allow more time, if needed, at different points in the development of course material. Course authors worked with the T4.1 lead over a four-week period to draft up content. A typical schedule:

- Week One: Short meeting (45 minutes) between T4.1 lead and course author team to run-through the process, share the template, discuss the course content and brainstorm together.
- Week Two & Three: Course authors work together to develop draft content (sprint) including check-in to discuss progress.
- Week Four: Handover to OU team, finalising content, review etc. T4.1 lead handover to production team.

Table 3 shows part of the schedule for the development of the *Digital Energy Essentials* courses.

	Course Title	Lead author(s)	Start (week 1 begins)	End (handover to OU team)	Review	Handover to OU production team	Cycle
1	What is the digital energy transition?	OU, Flux50 & RdA	January 2024	January 2024 (complete)	Consortium review	Complete but revisions in progress	One
2	Why digitalise energy?	Flux50 & RdA	7 February 2024	26 February 2024 (currently with OU team)	w/c 11 March 2024	Monday 18 March 2024 latest	One
3	Energy use (including myths)	Flux50	w/c 4 March 2024	During w/c 25 March 2024	w/c 1 April 2024	By Monday 8 April 2024	One
4	Smart devices & digital energy technology.	Flux50 & INESC	w/c 1 April 2024	During w/c 22 April 2024	w/c 29 April 2024	By 10 May 2024	Two
5	Markets: Dynamic pricing and tariffs	ICCS & ThinkE	w/c 8 April 2024	During w/c 13 May 2024	w/c 20 May 2024	By 28 May 2024	Two
6	Markets: Demand response	JR, INESC & ICCS	w/c 6 May 2024	w/c 27 May 2024	w/c 3 June 2024	During w/c 10 June 2024	Two

Table 4: Updated Schedule: Digital Energy Essentials Sprints (7 March 2024)

Sprint methodologies were successfully deployed at various points throughout the development of Every1 learning materials. The structured approach used (see table 4) provided a starting point for discussion with teams and ensured that activities and timelines were negotiated throughout.

Catalogue of online learning materials, format, content author and production leads, and cycles of development and production. All materials, when published, are available via the project's Knowledge Hub: https://every1.energy/knowledge-hub

	Original Description of learning material	Description of final learning material(s)	Title of Resource(s)	Target audience(s)	Showcased during cycle(s)	Production lead	Content author leads
1	At least 12 Open online courses of 30 minutes within the OpenLearn environment, made available in all European languages and targeting over 10 000 learners. The courses will be tailored to different types of learners and be co-created and piloted with local ecosystems.	Stand-alone, self-paced foundational short courses, each lasting a thirty-minute duration and with the opportunity to be awarded a digital badge following successful completion of a short online quiz. Co-creation with Consortium partners, and extensive testing feedback with local ecosystems. Translated into 23 European languages. Courses presented in Storyline/Articulate on OpenLearn Create. 3.4 million learners a year visit OpenLearn Create [REF]	1) What is the digital energy transition? 2) Why digitalise energy? 3) Energy use. 4) Smart devices and digital energy technology. 5) Electricity markets: understanding prices and tariffs. 6) Electricity markets: demand response. 7) Clean energy for households. 8) Privacy, safety and security in the digital energy landscape. 9) Energy information and critical literacy. 10) Energy communities. 11) Energy flows, energy systems. 12) Energy Anxiety.	General public, non-technical focused employees in sector	1-3	OU	OU, Consortium partners

	Original Description of learning material	Description of final learning material(s)	Title of Resource(s)	Target audience(s)	Showcased during cycle(s)	Production lead	Content author leads
2	A minimum of 15 Case Studies explained in short and attractive videos, accompanied with explanatory material and inspired by the successful Harvard Case Studies.	Case studies comprise of 2-page attractive factsheet, reflective question set(s) and associated wrap-around text. 7 short videos, each ending on a call to action, were also created for select case studies. Case studies include real-world examples and tips. Discussion with Consortium partner teams helped refine knowledge gaps further and identify key challenges for different sectors that could be addressed through this learning material type (e.g. sustainability of energy communities).	1) Supporting your energy community: energy poverty. 2) Energy communities: working together. 3) Energy communities: Getting started with digitalisation. 4) Energy communities: Marking decisions about solar energy. 5) What is energy democracy? Examples from European energy communities. 6) Energy communities: How to evaluate digital technologies. 7) The digital energy transition: Supporting communities. 8) Collaborating across the digital energy landscape: Data sharing. 9) The digital energy transition: Making a positive difference to our climate.	Energy communities; municipalities, local authorities, cluster organisations.	5	OU	OU, Consortium partners

	Original Description of learning material	Description of final learning material(s)	Title of Resource(s)	Target audience(s)	Showcased during cycle(s)	Production lead	Content author leads
			10) Energy communities: Understanding different energy sources. 11) Supporting transport decarbonization in your municipality or local authority. 12) Increasing sustainability in public spaces. 13) Supporting the digital energy transition in your local authority or municipality: Plug and play solar panels. 14) Cluster organisations and the digital energy transition. 15) Understanding the trade-offs of alternative energy sources.				
3	Up to 2 MOOCs, which will be delivered in cooperation with EDDIE project of	One 5-week MOOC hosted on OpenLearn Create. Each week of the course comprises 90 minutes of study time, 10 minutes of activities, at least 1	Get-set for success: digital energy basics	Non-technical students, individuals already working in energy sector in non-technical roles	5	OU	OU, Consortium partners, video contribution from EDDIE

	Original Description of learning material	Description of final learning material(s)	Title of Resource(s)	Target audience(s)	Showcased during cycle(s)	Production lead	Content author leads
	which ICCS (NTUA) is partner.	short video (10 mins) and a short reflection. There is also a short quiz at the end of each section. This MOOC remixed and extended Every1 *Digital Energy Essential* material and includes a new section on careers/skills in the digital energy transition which feature two videos from EDDIE.					
4	A minimum of 5 webinars, all provided in different languages, each time adjusted to the local context and learning style of the target audience.	1) Edited webinar recording, from showcase events (English) 2) Edited webinar recording, from showcase events (English) 3) One webinar in Dutch 4) One webinar in Portuguese 5) One webinar in Spanish 6) One webinar in French	1) Introduction to the Digital Energy Transition 2) Digital Inclusion in the Digital Energy Transition 3) Flexibility: why and how? Opportunities for the smart prosumer 4) What can we learn from the blackout in Spain and Portugal 5) What is a digital twin of the grid?	General public, Policy Makers, Prosumers, SMEs	1 and 6	THNK & OU	TuE, INESC-TEC, Flux50, THNK

	Original Description of learning material	Description of final learning material(s)	Title of Resource(s)	Target audience(s)	Showcased during cycle(s)	Production lead	Content author leads
			6) What is bidirectional charging?				
5	At least 3 online games.	3 online games for a variety of different audiences.	1) Your House. 2) Flexibility: Can you beat the market? 3) Which energy community is most communally energetic?	1) General public 2) General Public 3) Energy communities	4 and 5	THNK	THNK
6	At least 10 online interactive presentations (Articulate) in a minimum of 12 languages.	12 online interactive presentations (PPT) in English language, with 10 translations for each. Proposed interactivity was checked by an OU accessibility expert and adjusted accordingly. Presentations are short (20-30 slides) and can be repurposed. Content focuses on addressing key questions, misconceptions and practical actions.	1) Energy myths busted: Fact Vs. Fiction. 2) Get involved in the digital energy transition: 10 easy steps for homeowners and landlords. 3) Get involved in the digital energy transition: 10 easy steps you can take today! (for all occupants) 4) Digital energy basics for journalists. 5) Circularity and the digital energy transition.	All home occupants, including homeowners, landlords, renters etc. Energy communities. Businesses and SMEs. Journalists and writers.	Prototype in cycle 3, 4	OU	OU, JR, Flux50, ICCS, RdA, THNK, Eworx

	Original Description of learning material	Description of final learning material(s)	Title of Resource(s)	Target audience(s)	Showcased during cycle(s)	Production lead	Content author leads
		PPT format to facilitate reuse.	6) How does climate change impact renewable energy? 7) Helpful tips, tricks and tools to support setting up your local energy community. 8) Energy communities: IT basics. 9) Saving energy and making your business more efficient: 10 easy steps for SMEs. 10) Energy digitalisation for SMEs. 11) Cybersecurity digital energy myths… busted! 12) Cybersecurity in the digital energy transition.				
7	Video on how to develop learning pathways using the Every1 tool for designing such learning pathways.	Video released in April 2026	Using the Every1 Knowledge Hub	All users of Every1 learning materials	A prototype was shared for testing in cycle 6.	Eworx	Eworx

	Original Description of learning material	Description of final learning material(s)	Title of Resource(s)	Target audience(s)	Showcased during cycle(s)	Production lead	Content author leads
8	Video training on how to adjust, re-use, and alter the provided learning materials.	Four training videos are available. These additionally all feature in the *Every1 OER Remix Toolkit*.	*Get started with reusing Every1 learning materials (Parts 1-3)* Webinar recording of *Every1 learning materials for your context: Get started with remix* (D5.3).	Ecosystem and Market Enabler partners with an interest in localisation and reuse.	Get started… in 1, 2, 3 & 4	OU	OU

Table 5: Catalogue of online learning materials and progress to date

3.10. Overview of offline learning materials

In response to the identified need for information dissemination, stakeholder engagement, and capacity building, the Every1 project developed a series of offline learning materials (T4.4) led by EWORX. These materials were designed to complement and enhance the online resources by addressing the specific habits and needs of diverse stakeholders, including those who prefer traditional formats or may have limited access to digital platforms. Offline materials, including booklets, case studies, and secondary school resources, are a core component of the Every1 project's dissemination strategy and were based on the cycled approach.

As mentioned in section 2.2, to ensure these materials were effective and relevant, as per the online learning materials, their development was informed by insights from WP3, which focused on:

- **Defining learning outcomes:** This ensured the materials were aligned with broader project objectives and addressed key knowledge areas.
- **Identifying knowledge gaps:** This ensured the materials effectively bridged those gaps and provided valuable information to the target audience.
- **Understanding the target audience:** This included consideration for a wide range of stakeholders, their diverse levels of technical expertise, and their engagement in the energy transition. Personas were also developed to better identify stakeholder profiles and assist in mapping a comprehensive strategic approach when crafting the materials.

Specifically, D3.3, provided insights into the following key themes, which are reflected in the offline materials:

- **Understanding energy usage:** This included topics such as individual energy consumption patterns, energy efficiency measures, and the impact of different energy sources.
- **Sustainable mobility:** This encompassed the environmental impact of transportation choices, the benefits of electric vehicles, and related infrastructure considerations.
- **Smart metering and data:** This involved understanding smart meter data, leveraging it for energy management, and addressing related security and privacy concerns.
- **Environmental sustainability:** This included the role of individual choices in promoting a cleaner energy future and understanding the potential drawbacks of energy digitalisation.
- **Energy policies and regulations:** This covered awareness of relevant energy policies and EU legislation that impact individuals and communities.

By incorporating these insights, the offline learning materials effectively addressed key knowledge areas and contributed to achieving the overall project goals related to citizen engagement and empowerment in the energy transition.

Production Process and Standards

The production of these offline materials (Tasks T4.4-T4.6) involved a meticulous, multi-stage Plan, Do, Check, Act (PDCA) process.

Needs and Format Selection

To ensure effectiveness, material development was informed by insights from WP3 particularly from D3.1. These insights defined learning outcomes and identified knowledge gaps.

Format Selection
The appropriate format for each material (e.g., an Information Booklet for general public introductions; case studies for deeper professional reflection) was carefully selected based on the target audience's needs and the desired learning outcomes.

Example Title by Theme

- Energy Communities: What is an energy community and why should I join?
- Cybersecurity: Cybersecurity in the Digital Energy Transition
- Homeowner Focus: Information and Engagement Package 1 - Empowering the Energy Consumer (Homeowner).

Insights on needs were drawn from D3.3 (planned publication: Autumn/Winter 2025), specifying themes like Sustainable mobility and Smart metering and data, which were used even before the official publication of D3.3.

Content Development and Verification

- **Content Development**: Subject matter experts collaborated using the knowledge base established in work package 2 (WP2) to create comprehensive and accurate content, ensuring alignment with WP3's defined learning outcomes.
- **Review**: Internal and external stakeholders reviewed the materials.
- **Accessibility Standard:** For all final offline PDFs, the project applied the WCAG 2.1 AA standard (Web Content Accessibility Guidelines) to ensure accessibility.

Collaboration with Energy Communities in case study development

Collaboration with energy communities was prioritised throughout the learning material development process, particularly in the creation of case studies (as seen in the table in 2.2.4). This collaborative approach, with its emphasis on emerging and flexible co-creation activities, ensured the learning materials are grounded in real-world examples and reflected the evolving needs and experiences of those actively involved in the energy transition.

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Overview of offline learning materials, progress to date, production and content author leads. A RAG status is also indicated, which gives a topline overview of whether a particular learning materials is developing according to schedule.

	Learning Material	Progress to date	Title of resource(s)	Target audience(s)	Showcased in Cycle (s)	Production lead	Content author leads	RAG status
1	Minimum 3 information booklets in at least 10 different European languages.	Three out of the three information booklets have been delivered during Cycle 1 and Cycle 3 and are uploaded to the website. All three booklets have been translated in Greek, and more translations are planned.	What is the digital energy transition and why does it matter? Cybersecurity in the Digital Energy Transition What is an energy community and why should I join?	General public, non-technical focused employees in sector and energy communities	Cycle 1, 3, 4	EWORX	EWORX, JR	GREEN
2	At least 2 sets of course material for secondary schools in all European languages, adapted to the local context and including guidance for teachers.	The sets of course materials have been split up into two sets of materials with one aimed at a younger age, making it also usable in the last years of primary school, and one aimed at older secondary school children. Both feature a broad introduction into the digitalisation of electricity.	1) Energy digitalisation for 12-year-olds 2) Energy digitalisation for 16-year-olds.	Secondary school children	Cycle 6	THNK	THNK	GREEN
3	An expected set of 15 on-demand slide decks and training guide	These learning materials are under discussion and are produced from cycle 3 onwards.	1) Energy Digitalisation for SMEs	General Public, SMEs Policy Makers Market Enablers		THNK	THNK	AMBER

	Learning Material	Progress to date	Title of resource(s)	Target audience(s)	Showcased in Cycle (s)	Production lead	Content author leads	RAG status
	for specific categories of companies.		2) An energy community is more than just energy sharing 3) How does flexibility help the grid 4) Do renewables make the grid unstable 5) Avoiding the Mattheus effect 6) The changing role of citizens in the energy transition 7) Is going off grid a good idea 8) What is bidirectional charging 9) What can we learn from the Spanish and Portuguese Black-out? 10) Why do we need interoperability between household appliances 11) What is a digital twin of the grid	Energy Communities				

	Learning Material	Progress to date	Title of resource(s)	Target audience(s)	Showcased in Cycle (s)	Production lead	Content author leads	RAG status
			12) Why cybersecurity matters 13) How to make our grid cheaper 14) The energy market explained 15) Why is my solar energy worth nothing anymore					
4	At least 2 design thinking sets which allow a practical experience-based challenges with guidance material covering all European languages.	These learning materials have been produced from cycle 3 onwards.	1) Communication toolkit for energy communities 2) A card deck for energy communities	Energy Communities	5 and 6	THNK	THNK	GREEN-AMBER
5	At least 4 different sets of "information	The set of information and engagement packages has been structured to include	Information and Engagement Package 1-Empowering the Energy Consumer (Homeowner)	General public, educators, homeowners,	Cycle 3,4	EWORX	EWORX	GREEN

	Learning Material	Progress to date	Title of resource(s)	Target audience(s)	Showcased in Cycle (s)	Production lead	Content author leads	RAG status
	and engagement packages" for cities, communities or ecosystems, targeting a diverse type of stakeholders, and each offered in up to 10 languages.	three types of materials. Each set will feature a promotional poster, a practical guide serving as the primary learning resource, and a Frequently Asked Questions (FAQ) document to help readers familiarise themselves with the key information. Production has started from Cycle 2 and onwards and has been concluded They are currently being translated in other EU languages.	Information and Engagement Package 2-Energising the Energy Community (Member Focus) Information and Engagement Package 3- Empowering the Education Sector Information and Engagement Package 4- Empowering Businesses (Processes)	tenants, small businesses and energy communities				
6	Engaging case study descriptions (minimum 8), with layered detail provided in printable format and provided in at least 8 languages.	9 total case studies completed including the two initial studies and seven co-created case studies from Cycles 1, 3, 5 and 6. The ninth, which was additional to the requirements, was developed after a co-creation opportunity that covered additional knowledge gaps.	Digitalisation and Sustainable Mobility-The EU Policy Framework Empowering Tenants for Energy Reduction- A Win-Win in Digital Transition Hyperion: A pioneer in Community Energy Energi Akademiet - A Model for Community-Led Sustainable Energy Transitions	Energy communities, general public municipalities, policy makers, local authorities and Cluster organisations.	Cycle 1,3,4,5,6	EWORX	EWORX, JR, INESC TEC, RDA, FLUX 50	GREEN

	Learning Material	Progress to date	Title of resource(s)	Target audience(s)	Showcased in Cycle (s)	Production lead	Content author leads	RAG status
			European Islands of Innovation: Digital Solutions for Sustainable Energy Communities in Europe Hindelang Cooperative Case Study Implementing Digital Technologies for Energy Management The EU Policy Framework for the Digital Energy Transition The Collective Energy Coop Story					
7	Training guide on how to develop capacity building material on this topic, using Every1 and other available material.	The training guide will be delivered in the final cycle of the work package. This decision was made to ensure thorough documentation and reflection on the processes and lessons learned, which are valuable to share with the public, throughout the project's execution.				EWORX	EWORX	GREEN
8	At least 1 game for younger children (aged	The board game, designed for younger children (up to 14 years old), has been	Peacocks to peak-off	Children under 14	Cycle 1	THNK	THNK	GREEN

	Learning Material	Progress to date	Title of resource(s)	Target audience(s)	Showcased in Cycle (s)	Production lead	Content author leads	RAG status
	up to 14), following the successful “power of community” game and similar games.	developed in Cycle 1 based on the successful "Power of Community" game model. This interactive and engaging tool is introducing children to the concepts of energy communities and sustainability in a playful and accessible manner.						

Table 6: Overview of offline learning materials and progress to date

4. User testing of learning materials

To improve the Every1 learning materials, the materials were tested and evaluated by stakeholders in the digital energy transition. To increase usability of the materials for diverse user groups, diverse perspectives were included in user testing of the materials. Feedback was received from for example energy communities, local authorities, business clusters, local educational organisations, and market enablers. Feedback was received from across fourteen European countries.

The insights from user testing were reported in a test report per production cycle, detailing feedback per learning material. This informed the improvement of the tested materials, the development of new materials, and communication and dissemination of the materials.

This chapter presents insights from user testing of the Every1 learning materials of all production cycles 1-6. 2 materials. A total of 80 concept materials were tested, which led to the development of the total 87 Every1 final learning materials. The few final materials that were not explicitly tested, could be improved with the feedback received of the other similar tested materials, as we learned that similar materials tend to receive similar feedback. All Every1 materials were tested between June 2024 till December 2025.

The earlier submitted version of this report included the insights from test cycle 1-5, which was submitted October 2025. At that time of submitting, the testing of the final set of materials of cycle 6 was still in progress. This report in front of you is the updated version of the October 2025 report, now including also the testing insights from the sixth testing cycle.

First, section 4.1 presents our methodology for user testing. The testing strategy that informed all testing includes a flexible, mixed-methods approach, drawing on consistent evaluation criteria. Within this testing strategy, we used diverse testing activities that developed throughout the testing cycles: webinars, surveys, interviews, workshops, and roadshows. We conclude this section with our key lessons on maintaining participation in user testing: flexibility and personal contact. Second, in section 4.2 we reflect on the recurring feedback across the different learning materials, which shows diverse learning needs in the digital energy transition. We explain Every1's solutions to navigate this feedback in the development of the learning materials.

4.1. Methods: lessons learned on user testing processes

4.1.1. Testing strategy: flexibility, mixed methods, consistent criteria

To enable meaningful feedback collection, the Every1 testing approach was built on the following three pointers. First, flexibility in developing and adjusting testing activities throughout the testing cycles, as described in section 4.1.1.1. Second, our mixed-methods approach draws on both quantitative and qualitative research, as explained in section 4.1.1.2. Last, consistent evaluation criteria enabled consistency across learning materials and testing approaches, as presented in section 4.1.1.3.

4.1.1.1. Flexibility

An outline of the user testing was set up at the start, which was flexibly developed and adjusted during the testing periods, in response to the needs and preferences of participants and to dynamics within the Every1 project. Flexibility in our user testing had two dimensions:

1. **Flexibility for participants** enabled them to participate in testing in ways that suited them best. Participants could select the materials that they were interested in to provide feedback on. Participants could also choose various ways to provide their feedback, e.g. one on one interviews, short surveys, webinars, as described one by one in section 4.1.2.
2. **Flexibility for dynamics within the Every1 project** means that we were flexible to develop the testing activities in relation to other developments within the Every1 project. For example, in later stages of the project 'roadshow activities' were organised to promote the Every1 project, in which we could integrate user testing.

We found that flexibility did not mean letting go of all structure. In the Every1 project flexibility meant giving participants clear choices within a well-defined offer. The options for materials to test, and activities to provide feedback through were outlined, within which space was created for participants to choose what suits them best.

4.1.1.2. Mixed-methods

With the mixed-methods user testing approach we drew on the strengths of both quantitative and qualitative research methods. We used *convergent* mixed-methods, meaning that we collected and analysed the quantitative and qualitative data in parallel, to understand if the data confirm or disconfirm each other (Creswell & Creswell, 2018). The mixed-method approach also supported the flexibility offered to participants, as mixed-methods enabled us to offer various ways to provide user feedback.

The ***quantitative*** data collection and analysis involved a testing survey for each learning material. Key strength of the survey was the scalability, as it enabled us to reach larger numbers of participants efficiently. Through the surveys we could invite all committed ecosystems in the Every1 project in each cycle to provide their feedback on the learning materials. Moreover, we could invite wider public audiences in testing through LinkedIn and roadshow activities. From a participant perspective, the quantitative surveys offered a less time-consuming option to provide feedback, complementing more in-depth qualitative methods like interviews.

The ***qualitative*** data collection and analysis consisted of the in-person interviews and workshops with committed ecosystems. These qualitative discussions with participants allowed to ask follow-up questions, which deepened our understanding of the feedback (Creswell & Creswell, 2018). From a participant perspective, the personal contact in interviews and workshops strengthened the longer-term relationship between the Every1 project and the participating ecosystems.

4.1.1.3. Consistent evaluation criteria

To enable comparison and ensure consistency across the different testing activities for the various materials of the various cycles, all learning materials were evaluated on the same criteria. These criteria were selected in close collaboration with Every1 consortium partners and informed by conversations with participants. We found this set of evaluation criteria to be a helpful way to ensure consistent and meaningful user feedback. In the criteria, we distinguished between criteria to evaluate the format, content, and impact.

1. The ***contents*** of the materials were evaluated on: topics, difficulty level, level of detail and practical tips and examples.

2. The ***format*** of the materials entails the way in which the content was presented. The formats were evaluated on: navigation, difficulty of language, tone of voice, and images.

3. The ***impact and usage advice*** was evaluated by asking: if people would recommend this to others, if it met their expectations, if they expect behavioural change and how they think this could be implemented. During the first testing cycles we experienced that participants also brought up feedback about the intended target audience and implementation of the learning materials. Therefore, we expanded the *impact* section to *impact and usage advice* in later cycles, in which we asked about the intended target audiences and advice for spreading and implementing the learning material further.

4.1.2. Testing activities: evolving over time

Within the testing strategy, we developed diverse testing activities to collect user feedback. These activities were developed in response to evolving needs and preferences of participants, and dynamics within the Every1 project. The activities and their developments are presented one by one in this section: interactive showcase webinars (section 4.1.2.1), online surveys (section 4.1.2.2), interviews (section 0), workshops (section 4.1.2.4) and roadshow activities (section 4.1.2.5).

All testing activities followed scientific integrity and ethical research standards. The testing activities were developed in consultation with the ethical review board of Eindhoven University of Technology, who approved the testing research activities. To ensure scientific integrity and ethical research, it was key in our research approach to inform participants, ask their informed consent, and handle the collected research data safely.

4.1.2.1. Webinars

A total of 10 webinars were organized to serve the testing processes, and building connections and interactions with Every1 ecosystems and market enablers, and audiences beyond that. The agenda and testing processes in the webinars developed as follows over the testing cycles:

Cycles 1-3: Showcase webinars to promote opportunities to give feedback.

Showcase webinars were organized for participating ecosystems in the Every1 project, to connect about the development of Every1 learning materials. Testing in cycles 1-5 started with a showcase

webinar, to which all participating ecosystems in the Every1 project were invited through mail. Section 2.2.3 explains the set-up of those webinars, which also included other aspects of learning materials like co-creation. In this section, focus is on the role of the showcase webinars in testing the materials, which developed over the production cycles.

We started the webinars because we felt a need to explain the Every1 project and testing process in more detail to participants, as it was especially in earlier cycles new to participants. The webinars focused on showcasing the learning materials that were out for feedback, and ways in which feedback could be provided. Additionally, from cycle 2 onwards the webinar included reflections on how earlier collected feedback was incorporated in the project, to show how feedback was valued.

Cycles 4-6: NEW: Showcase webinar with live feedback collection.

After three cycles we felt a decreasing interest in webinars about the newest learning materials out for testing and the ways in which feedback could be provided. The participation in the webinars decreased. Therefore, we decided to shorten the sections on learning materials and testing updates, and focus on testing a learning material during the webinar itself. This was done through a live demonstration of one of the learning materials in the webinar, after which the participants provided feedback through Mentimeter, the Microsoft Teams chat, and in a live verbal discussion. The questions for feedback were based on the consistent evaluation criteria.

In cycle 4, this led to helpful feedback from 5 participants. Therefore, we continued with live testing in cycle 5, but unfortunately this webinar was only attended by one participant. In cycle 6, the showcase webinar was dedicated specifically to the Every1 market enablers network, as the learning materials to test were especially targeting market enablers. This market enablers webinar was attended by 3 participants.

Cycles 6: NEW: Educational webinars in local languages

In cycle 6, four webinars were organized in four different local languages, to reach, inform and enable feedback collection beyond English-speaking audiences. Webinars took place in French, Spanish, Portuguese and Dutch. On-demand slide decks were used by presenters to give an educative presentation to the audience. Unlike the other showcase webinars, these webinars did not cover the learning-material design concept. Instead, they focused on informing about specific aspects of energy and digitalisation. Feedback was received through online surveys on the EU Survey platform, each translated in local languages corresponding to the webinar. The feedback request and survey were promoted at the end of the webinar, after which the final five minutes of the webinar were made available to participants to fill in the survey, increasing the response rate to the surveys (French = 3, Spanish = 1, Portuguese = 6, Dutch = 28 responses).

4.1.2.2. Online surveys

Surveys were developed to reach a variety of target users and offer participants a less time-consuming way to provide their feedback (5-10 minutes to fill in the survey).

Spreading the surveys

In each cycle, a **launch document** was published that presented the overview of the learning materials that were tested in that period, and that included the link to the survey. Figure 1 shows a screenshot of the launch document of cycle 5, to give an example on how the materials were presented in the launch documents. The information for the launch document on each material was provided by the learning material developers. The launch documents were initially spread through mail to the Every1 ecosystems at start of the testing period for each cycle. As the survey responses from Every1 ecosystems decreased over the cycles, we expanded the outreach to broader audiences through LinkedIn, featuring the BRIDGE newsletter.

The survey responses decreased during the cycles, despite extra outreach efforts (see Table 7). A potential explanation could be that people who participated in earlier surveys felt 'fatigue' of the surveys. Nevertheless, it was a valuable channel for feedback in earlier cycles. We received feedback from diverse organizations like municipalities and energy communities, from seven different European countries: Croatia, Czechia, Germany, Greece, Hungary, the Netherlands, Portugal. We continued to share the launch document and surveys in later cycles, because we did want to offer this less time-consuming option for providing feedback.

Structure and analysis of the surveys

Participants were asked to fill in a survey after they had explored one of the Every1 materials. So, each response related to a specific material. The survey first asked for informed consent. Then, feedback was asked on a 5-point Likert scale structured by the consistent evaluation criteria. An open question was added to allow additional feedback. Lastly, demographics like gender, age and professional background were asked to get an understanding of the participant. Depending on the set of responses, the analysis was conducted on a cluster of materials with the same format or for a specific material.

Figure 1: Launch document cycle 5, description of one of the learning materials as example

2. Energy Communities: Working Together

This case study addresses the difficulty of sustaining energy communities over time.

Format: Case study content overview
Duration: 15 minutes review time
Target Audience: *Energy community leaders and members*

Suggested Usage: Final versions of case studies aim to support conversation, reflection and action on a topic. Each case study provides key facts, examples, a short video, practical advice and reflective questions. For review, we provide key information on each topic, which will be used to inform and structure each case study and its individual components.

Figure 1 Working together by Alan Levine is licensed CC BY 2.0.

Topics covered:

- Factors that impact on sustaining an energy community.
- The role of effective communication and collaboration in sustaining energy communities.
- Sustainability good practices used by different types of energy communities across Europe.

Overview:	https://drive.google.com/file/d/1uZaP0JqS7zq4T2_XE4jpHqqVEsLJPuFF/view?usp=share_link
Short survey:	https://ec.europa.eu/eusurvey/runner/Every1-Your-Feedback-On-Cycle5-Learning-Materials

Table 7 : Overview of survey responses per cycle

	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Total
Testing period	Jun – Oct 2024	Oct- Jan 2024/5	Jan – Mar 2025	Apr- June 2025	Jul - Sept 2025	Oct- Dec 2025	
#materials tested	11	6	8	16	20	19	80
Online survey responses	22	13	0	3	0	0	**38**

4.1.2.3. Interviews

Interviews were organised for more in-depth feedback on the learning materials.

Invitations

The participants for the interviews were invited because they were engaged in the Every1 project as committed ecosystems, market enablers or synergy projects. To hear more diverse voices in the feedback, we aimed for participants with diverse geographical backgrounds and working at diverse organisations. In later cycles, we were also able to organize interviews with organisations not committed to the Every1 project, to hear more diverse perspectives and reduce the load for providing feedback on committed ecosystems.

Participants

In cycles 1-6 a total of 60 interview participants provided their feedback in the interviews, see Table 8. In principle there was one participant per interview, but sometimes more people from the same organisation joined in one interview.

Table 8 shows that most interviews took place with energy communities and local authorities. Less interviews took place with cluster organisations, because they expressed less interested in the learning materials from the Every1 project, but instead showed more interest in the other aspects of the Every1 project like networking activities. Nevertheless, for the learning materials that specifically targeted cluster organisations were tested with cluster organisations. Interviews with diverse organisations helped us to understand user feedback from diverse stakeholders in the digital energy transition.

Table 8 : Interview participants per ecosystem type

Type of ecosystem	Number of participants
Local authorities	25
Energy communities	25
Cluster organisations	5
Other, like local education organisation	5
Total	*60*

The interviews thus provided user feedback from a geographically diverse group of participants, covering a broad range of regions across Europe.

Table 9 shows that we tested the materials with participants working in 13 different European countries and two times a participant worked for a European organisation. The interviews thus

provided user feedback from a geographically diverse group of participants, covering a broad range of regions across Europe.

Table 9 : Interview participants geographical overview

	Country	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Total
	# materials tested	*11*	*6*	*8*	*16*	*20*	*19*	***80***
1	Austria		1					**1**
2	Belgium		2		1			**3**
3	Croatia		1					**1**
4	Czechia				1		1	**1**
5	Denmark				1		1	**1**
6	France				1	1		**2**
7	Greece	9	2	2		3	4	**16**
8	Hungary			1	1		1	**2**
9	Ireland					1		**1**
10	Netherlands			3		3		**6**
11	Portugal	13			1	1	1	**15**
12	Sweden					1		**1**
13	EU level				2			**2**
	Total	**22**	**6**	**6**	**8**	**10**	**8**	**52**

Interview guide and analysis

The interviews were scheduled to take 1 hour. Most interviews took place online and in English, and if possible in person or in the local language. The interviewees could explore the learning material

beforehand, but it was not mandatory to prepare for an interview to reduce the time investment for the participant. During the interview there would be time for the participant to have a look at the material.

The interviews were guided by a semi-structured interview guide that set out the structure of each interview, to ensure consistency in the research methods across the different learning materials and the researchers involved in the testing interviews. The semi-structured interview guide ensured all elements of the learning materials were discussed, but also allowed to explore other feedback directions that came up during the interview. This also guided the analysis: presenting feedback on the consistent criteria but also being open for other feedback aspects, drawing on a qualitative research approach.

The interviews were also an opportunity to connect with committed ecosystems in the Every1 project about other aspects of the project. Sometimes the interviews led to additional questions or requests to other partners in the project, or for example collaborations on promoting the Every1 project within a specific ecosystem.

4.1.2.4. Workshops

In cycle 1, we explored testing in workshops with a group of participants of specific ecosystems. Table 10: shows the details of the two in-person workshops we organised to test materials with energy communities. This was a valuable way to collect feedback, and to strengthen relationships with the ecosystems early in the project. But it was also challenging to organize a moment at which enough participants would be available, and it required efforts from both the Every1 project and the ecosystem to tailor the workshop to the specific needs of the local ecosystem. Therefore, we focused in later cycles more on interviews for in-depth qualitative feedback.

Table 11 shows the details of the testing of the game for children. These workshops were organised for the specific needs of testing this game. This was a valuable way to collect feedback from end users of the game, both from children and teachers, see Figure 2.

Figure 2: Testing the game in classroom

Table 10: Workshops with energy communities

#	Country	Ecosystem type	Language	Participants
1	The Netherlands	Energy community	Dutch	7

2	Greece	Energy Community	English	6
	Total			**13**

Table 11: Workshops to test the game for children

#	Country	Location	Participating children	Age of children	Language of instruction	Teachers joining
1	Portugal	Primary school	16	7-8	Portuguese	2
2	Portugal	Primary school	16	9-10	Portuguese	2
3	Greece	Youth Centre	5	13-14	Greek, English	3
	Total		**37**			7

4.1.2.5. Roadshow activities

The roadshow testing was implemented later in the project, in collaboration with the communication and dissemination activities in WP5. The WP5 team initiated roadshow activities to promote the Every1 project amongst wider public audiences, by supporting outreach campaigns with promotional stands in public spaces and events. In some of the roadshow activities, consortium partners could combine the roadshow promotion with testing learning materials, as shown in Table 12. This led to valuable feedback from wider public audiences in addition to the feedback we collected from committed ecosystems in the other activities. This enabled for example to receive feedback from students, to hear perspectives from younger people in the digital energy transition.

The roadshow stands were decorated with posters and flyers, an impression can be found in Figure 3. People were invited to participate in testing a learning material for approximately 10-15 minutes. Participating in testing would mean: get an introduction to the Every1 project, discuss and sign informed consent form, read the learning material, fill in the survey, and receive a chocolate bar with Every1 flyer as thank you. We experienced that it was important in this activity to test specific learning materials that would spark interest at a broad target audience at the roadshow, to ensure that a broader public audience would be interested in participating.

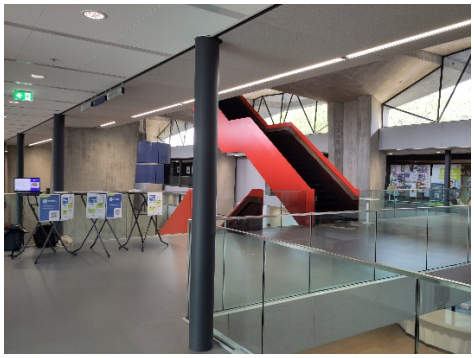
To reduce the time people would need to participate, participants were not obliged to read all details of the material, but instead to read the first part and scan the rest of the material. This would give them enough insight into the material to be able to give feedback. Moreover, we divided the

consistent evaluation criteria into three surveys, to shorten the surveys. The open text field enabled participants to write down any feedback they would have, which led to a meaningful coded analysis of open text feedback, in addition to the analysis of the Likert scale questions.

Table 12: Overview of roadshow activities

	Country	Location	Target audience	Cycle	Responses
1	Netherlands	Eindhoven University of Technology (TU/e)	students	cycle 4 (1 material)	27
2	United Kingdom	Open University (OU), Milton Keynes	staff and students	cycle 4 (2 materials)	20
3	Netherlands	Eindhoven University of Technology (TU/e)	students	cycle 5 (2 materials)	27
4	Denmark	TechBBQ conference (ICN)	Startups, scaleups, investors, corporates, policymakers, researchers, students	cycle 5 (2 materials)	30
5	Greece	NTUA Researcher's Night (EW, ICCS)	Citizens	cycle 6 (1 material)	2
6	Germany	Communication consultant office (S2I)	Communication professionals	cycle 6 (1 material)	3
7	Belgium	Smart Energy Academy (FLUX)	Companies	cycle 6 (3 materials)	35
	Total				***144***

Figure 3: Pictures of roadshow testing at OU and TU/e


4.1.3. Overview of all testing activities and participants

In conclusion, we could collect valuable feedback by flexibly developing the testing activities over the cycles, using mixed-methods and consistent evaluation criteria. Table 13 presents an overview of the testing activities over the cycles, showing how the activities and participation rates evolve over the cycles. In cycle 1, we did extra intensive testing, as these insights would be important to inform the development of learning materials in all later cycles. In the later cycles we developed the testing activities further based on evolving dynamics in ecosystems and the Every1 project.

We were able to navigate the participant fatigue often encountered in engagement in research projects, by flexibly adjusting our approach and using diverse testing activities. In this way, we received valuable feedback from diverse participants. This includes feedback from participants working at diverse organizations in the digital energy transition, and from participants in diverse European countries. By understanding perspectives of diverse stakeholders in the digital energy transition, we aim to improve the Every1 learning materials so that it addresses diverse needs in the digital energy transition.

Participants worked at diverse organisations in the digital energy transition: energy community coordinators, municipality staff working on energy and cluster organisation coordinators who reach

out to local enterprises. Most feedback was provided by people who work at those organizations in the field of energy and can potentially support others with the Every1 learning materials. Their perspectives were especially key, as they have experience with spreading information in their local ecosystems and can potentially work with the Every1 learning materials in their ecosystems. This is in line with the Every1 project objectives, as we aim to support local ecosystems to work on energy and digitalisation themselves. Furthermore, we explored perspectives beyond the ecosystem professionals, by reaching broader public audiences through the roadshow activities, for example to engage with younger audiences like students.

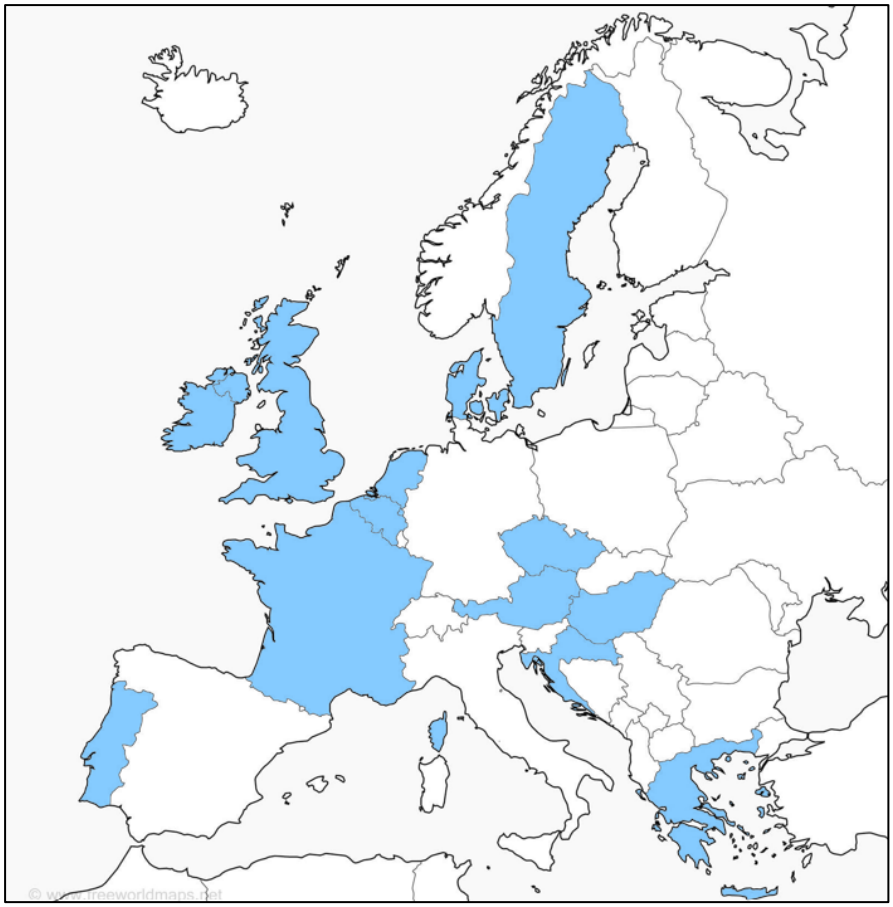
Furthermore, we were able to collect feedback across Europe in fourteen different countries. See Figure 4 for an overview of countries where interviews, workshops and roadshows took place. The geographical spread in user testing of the learning materials was important, because we experienced that although the digital energy transition impacts across Europe, needs and preferences on literacy differ. The geographical spread in user testing activities helped us to ensure feedback reflects perspectives from diverse European regions.

The insights from testing would feed directly into the improvement of the tested learning materials. Additionally, the insights would help to shape the materials developed in the next cycles and the testing insights on implementation could inform communication and dissemination activities.

Table 13: Testing activities over the cycles

	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	TOTAL
Testing period	Jun – Oct 2024	Oct- Jan 2024/5	Jan – Mar 2025	Apr- June 2025	Jul - Sept 2025	Oct-Dec 2025	
# materials tested	11	6	8	16	20	19	**80**
Webinar responses	*webinar without testing*	*webinar without testing*	*webinar without testing*	5 (1 webinar)	1 (1 webinar)	41 (5 webinars)	**47**
Online survey responses	22	13	0	3	0	0	**38**
Interview participants	22	6	6	8	10	8	**60**
Workshops	5 events 50 total participants	x	x	x	x	x	**5 events** **50 total participants**
Roadshow activities	x	x	x	2 roadshows 47 total participants	2 roadshows 57 total participants	3 roadshows 40 total participants	**7 roadshows** **144 participants**

Figure 4: Geographical spread of user feedback (interviews, workshops, roadshows)



4.1.4. Lessons learned in Every1 user testing: flexibility and personal contact are key

Key challenge in Every1 user testing was to maintain participation of ecosystems during the project. This means that we needed to ensure that our offers and requests would be of continuous relevance to the ecosystems, to overcome participation fatigue. Therefore, it was important that we could flexibly develop and adjust our testing activities throughout the project.

Different testing activities were valuable throughout the project duration. An overview of how the testing activities and participation rates evolved over the cycles can be found in Table 13 in section 4.1.3. In earlier cycles, broader target activities like the webinars and surveys enabled us to collect meaningful feedback. But as the project proceeded, we saw participation in those types of activities decreasing. We suspect that this might be because we asked this too often to ecosystems, and they experienced this becoming less relevant for them. To respond to this, we aimed to emphasize the importance of feedback to the Every1 project. We did this by explaining that and how the feedback would be used to improve the materials further, for example in invitation mails and in the “you said, we did” section in the showcase webinars. Furthermore, we decided to focus on testing activities in

which more participants would be interested in participating, in which especially the interviews were key.

The interviews remained a continuous way to be able to collect meaningful feedback on learning materials. We suspect that the more **personal nature of interviews** helped to enable people to participate in this, for example because the invitations were sent personally, and interviews could be scheduled at a specific time of preference, instead of needing to attend the webinar at a specific time. Moreover, people seemed to be more interested in having this one-hour interview in which they would go through learning material and discuss feedback, rather than doing this by themselves in the surveys.

Personal contact during the interviews was also helpful to build relationships with ecosystem professionals in the broader contexts of the Every1 project. The interviews for user testing were also seen as moment to connect about anything in relation to the collaboration of the Every1 project and the ecosystem. For example, sometimes participation in testing interviews led to connections for co-creation of new learning materials. Sometimes the interview led to exchange on social media posts that the ecosystem could share to share the Every1 knowledge Hub in their ecosystems. Some interviews led to potential connections to participate in the networking aspects of the Every1 project. This shows as well that personal contact was key for continuous participation in the Every1 project, in which the testing interviews could support.

Diverse testing activities and personal contact helped the Every1 project to test the Every1 learning materials with stakeholders from various key organizations in the digital energy transition, and across European regions. Feedback from these diverse perspectives shapes and sharpens the Every1 learning materials further, to support diverse stakeholders in the digital energy transition.

4.2. Key feedback on learning materials: diversity is important

During the testing, we found diverse needs and preferences for learning materials. Underlying these diverse needs is a challenge for the Every1 project: how do we address these diverse needs while developing learning materials that can be valuable across Europe? The Every1 project responded to this with four solutions.

4.2.1. Recurring feedback: diverse needs and preferences

Across the different learning materials, testing cycles, and participants, we identified recurring patterns in user feedback.

We found that the diverse materials and topics provided by the Every1 project were appreciated, as this responded to the diverse needs for learning about digitalisation and energy. For some people the materials that explained digitalisation of energy as technological development were more important, for others it was more important to better understand how digitalisation is used by energy

communities is practice. For some people deeper information was preferred, but for broader public audiences the simple language and introductory level of the materials were appreciated. For some people, a PDF learning material was easier to navigate and for others the on-demand slide decks were preferred for its interactivity. For some people a framing of learning materials about financial benefits was considered more important, for others, social of sustainability benefits were more important to highlight in materials. The positive feedback on the learning materials shows that the wide variety of learning materials was appreciated, to address diverse learning needs and preferences.

To improve the materials further, we often received feedback that learning materials are preferred that relate more to daily life, and include specific practical tips and examples. But, when zooming in more specifically in what practical tips and examples related to daily life would mean, we found diverse needs that often depend on local specific contexts. For example, the suggested examples and practical tips would depend on country specific energy policies and regulations, energy community developments, energy poverty policies and smart meter uptake. Moreover, sometimes people suggested to include examples from their specific local area or community.

Furthermore, we found a need to translate the learning materials into the local languages. The ecosystem professionals who provided feedback could do the testing and feedback in English, but expressed often that the only way to spread the material further in their local area would be to have the materials translated.

4.2.2. Underlying tension: addressing local specific needs on a European scale?

Underlying this recurring feedback, we find an underlying challenge on how the European Every1 project can address local needs by developing learning materials targeting all European stakeholders. On the one hand, we did find recurring feedback that pointed to a need to tailor the materials to specific contexts: with specific practical tips and examples related to daily life, and translations.

On the other hand, the Every1 project aims to develop capacity building learning materials to enable upskilling, reskilling, informing and engaging diverse stakeholders across Europe. Therefore, the materials could not be made too context specific, as we aimed to focus on learning materials that would address shared learning needs across Europe. This space to provide more examples and tips was also bound by the limited length of a learning material, as we learned that the materials were appreciated for not being too long. Moreover, sometimes practical tips could not be delivered on European level, as the practical tips would depend on country specific situations. The Every1 project was navigating the tension: how can we develop learning materials that are context sensitive while simultaneously serving a wide variety of European audiences?

4.2.3. Every1's solutions

The Every1 project combined four solutions to create learning materials that would be relevant to a wide variety of stakeholders in Europe, while also embracing diverse needs in diverse contexts.

First, the Every1 project continued to develop diverse learning materials. We learned that the materials were appreciated for addressing a wide range of topics about energy digitalisation, and offering this in a variety of formats. In these diverse learning materials, it was aimed to include diverse practical tips and examples, put diverse benefits into focus, and develop diverse formats. Despite contextual differences, we did find that many insights would lead to meaningful learning materials that would be useful across Europe. Within the broad set of Every1 learning materials, we aimed to develop meaningful learning materials that together would address diverse learning needs and preferences.

Second, we focused on clarifying the intended target audiences of learning materials. This would help people to find most relevant learning materials for them within the broader set of Every1 learning materials. The more suitable a learning material is for someone, the more it would address specific learning needs and preferences. To understand this better, the target audiences and potential implementation became part of the consistent evaluation criteria. Moreover, the intended target audiences and tips for implementation were often incorporated in the learning materials when possible. Furthermore, the Every1 Knowledge Hub that makes all learning materials publicly available also includes an indication for target audiences and implementation.

Third, the learning materials are designed to be 'reused, adapted, and remixed'. This means that the learning materials are licensed in a way that people can reuse, adapt and mix the materials so that it meets their specific needs and preferences (see section 3.7). The Every1 project also developed learning materials that explain open licensing and how people can localize Every1 learning materials for their contexts. During testing, we received positive responses to this option.

Fourth, to overcome the challenges with languages, the translations strategy of the Every1 project is key. The Every1 learning materials will be translated into diverse European local languages (see section 2.4), to enable usability of the learning materials across Europe.

5. Every1 Capacity Building Community

The capacity building community was established in mid-2024, making use of the existing ICN Solutions platform. At that stage, 16 members from the Every1 project were connected, and a comprehensive dissemination plan was developed in conjunction with WP5 to support engagement and growth.

The community has 20 members as of April 2026. Over time, however, it became apparent that the platform was underutilised and that it was difficult to generate traction, traffic, and active participation. While the platform remains open, the project team decided to shift focus towards channels offering greater potential for outreach and engagement.

Considering the nature of the project and its target audiences, a LinkedIn group was created in March 2025 to function as the new "capacity building community." This professional platform provides a more suitable environment for interaction and knowledge exchange. The LinkedIn group currently has 90 members, and with the dissemination activities planned under WP5, including targeted communication campaigns, membership is expected to increase.

As additional learning materials are being released and the tool is now concluded and populated with relevant content, it is anticipated that visibility and engagement will improve over time, supporting the project's overall capacity building objectives.

6. Recommendations

This section presents a summary and reflection on our approach and strategies for the development and testing of learning materials, with associated further recommendations based on lessons learnt.

Learning materials

People have diverse learning needs in the digital energy transition. The Every1 project aims to create learning materials that address these diverse local needs with learning materials that reach across Europe. To balance the specific learning needs in the creation of learning materials for European scale, the Every1 project worked with the following strategies:

- Offering diverse learning materials was helpful to respond to diverse needs on learning about digitalisation and energy. Every1 learning materials are diverse in topics, formats, and difficulty level, aiming to support diverse people. For example, gamification of learning materials and the use of interactive tools were highly effective in engaging specific, hard-to-reach audiences, such as children and young adults. This approach proved essential for our objective to engage *all* citizens in the digital energy transition.
- To help people identify learning materials relevant to their needs, an intended target audience and learning outcomes are included as part of each learning material.
- To support people to tailor learning materials to their specific preferences, we enabled opportunities to reuse, adapt and remix materials through open licensing.

- The learning materials are translated in diverse European local languages, to be able to reach across Europe.

Further recommendation: Prioritise localisation of materials where possible. Our feedback clearly indicated that materials needed to be in local languages to be effective for a broad audience. To reach as many people as possible and engage them effectively, the translation and localisation of materials should be an essential component from the beginning of the project.

Further recommendation: Prioritise the use of practical tips and real-world scenarios to make the material more engaging. This approach ensures the content is relevant and resonates with the target audience by connecting theoretical concepts to their daily lives.

Project organisation

- Incorporating agile methodologies to develop and produce learning materials provided the flexibility to address challenges and engage appropriately with stakeholders throughout the project. A cyclical approach also mitigated against overwhelm both within and outside the Consortium.
- Introducing additional meetings (*Ecosystems and Market Enabler journeys*) provided additional support for facilitating collaborative, cross-work package activities in the project.
- The user testing feedback was provided to the developers of the learning materials in a *test report* per cycle, to structure the handover of the feedback. To structure responses to the feedback, a *test response report* was developed per cycle. These reports documented OU and Eworx responses to user feedback and ensured that learning materials were updated, as appropriate, and changes were documented or feedback responded to accordingly. Headline feedback and responses were shared in showcases.

Further recommendation: Build a community via social media or elsewhere for stakeholders. Facilitate communication and knowledge sharing among stakeholders. A dedicated platform or social media group would allow them to communicate with each other, share inputs, and foster a sense of collective learning that extends beyond the project's formal materials.

Co-creation

- A flexible co-creation approach supports and respects different stakeholder availabilities and needs. Flexible co-creation means that diverse options were offered to engage with the learning materials in the project to enable people to participate.
- Centring co-creation with stakeholders through the identification of knowledge gaps, feedback via testing of learning materials and other collaborative activities ensured that learning materials are relevant and meet the needs of the target audience(s).
- Consistency in communication with stakeholders is key. Regular events to engage (potential) collaborators are key and acknowledgement of contribution (e.g. showing that you are actively responding to feedback) is important.
- In testing the materials, the survey responses declined during the project, but the interviews remained a continuous meaningful way to collect feedback on the learning materials. This enabled more personal contact to be established.

Further recommendation: Build in incentivisation for stakeholders engaged in co-creation activities. For example, financial compensation or payment-in-kind may be appropriate to acknowledge the time and contribution from individuals and organisations, particularly if volunteer or project-based.

Open licensing

- Providing structured support for expert teams on learning material authoring and open licensing was an important aspect of onboarding and supporting Consortium partners.
- Applying an open license which enables and supports remix/localisation was an important aspect of our open practices. In addition, a range of other activities and outputs enhanced support for openness within the project.

Further recommendation: Build in activities to address challenges such as a lack of openly licensed images on specialist topics. This could provide a fun and easy way to involve stakeholders.

7. Conclusion

The Every1 project developed and delivered 87 English language, openly licensed online and offline learning materials in 16 formats from September 2023 – April 2026. A total of 528 translations were produced, including translations into 23 European languages. Learning materials were made available via the Every1 Knowledge Hub. The Knowledge Hub provides a reusable catalogue of curated learning materials for the general public, energy communities, SMEs, municipalities and other non-technical audiences.

Development, delivery and testing of learning materials was organised through a cyclical Plan-Do-Check-Act (PDCA) process over six staggered cycles, allowing flexible planning, production, testing and translation - especially where audience availability (e.g., schools) required timing adjustments.

Co-creation was core to Every1's activities and was designed-in and not ad-hoc. Ten *Ecosystem and Market Enabler Journey* meetings aligned activities across the Consortium. Five showcase webinars structured testing entry points; and a targeted co-creation offer led to stakeholder-authored and/or validated materials (notably case studies) through questionnaires, one-to-one sessions and interviews.

Quality, accessibility and reuse were similarly designed-in and core to the development of Every1 learning materials. UDL principles informed learning material design, and a project accessibility guide supported authors and producers. Learning materials utilised openly licensed content, including images, and the project applied a CC BY-SA 4.0 license to its learning materials. This license was chosen to facilitate localisation and remix. Training and support for reuse of Every1 learning materials includes a video series, webinar, and an asset bank.

User testing combined flexibility, mixed methods and consistent criteria. The learning materials were tested over 6 cycles, with 60 interview participants across 14 countries, 38 survey responses, live webinar feedback (47 responses), 5 workshops (incl. classroom/game testing), and 7 roadshow activations yielding 144 public participants. This extensive testing process with diverse stakeholders, like energy communities, municipalities, business clusters and market enablers, helped to align the learning materials with diverse learning needs across different context.

The cross-cycle findings were consistent: audiences valued diverse formats and levels, practical, everyday examples, and local language availability. The project's responses to diverse learning needs in the digital energy transition are embedded in the final set of learning materials: maintaining format/topic diversity; clearer targeting of material; enabling reuse, and prioritised translations.

Finally, the capacity building community developed iteratively: from the ICN Solutions space to a LinkedIn group aligned with WP5 dissemination. This group will support ongoing engagement with the published learning materials and other Every1 activities.

To summarise, D4.1 and D4.2 delivered a tested, openly licensed catalogue of learning materials; a documented, replicable PDCA production-testing pipeline; a practical co-creation approach that generated stakeholder-grounded content; and an engagement channel for continued uptake. The learning materials reflect this iterative approach and support further reuse and localisation. Consequently, the Every1 project developed diverse learning materials that address the learning needs and preferences of diverse stakeholders in the digital energy transition.

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