AI 4 GREEN DEAL

Initial Quality Assessment Report

T1.1 Project management and progress reporting

ABOUT AI4GREENDEAL

Data & AI skills are growing in importance in the energy sector and become key requirements for energy engineers. To achieve the Green Deal objectives of reducing greenhouse gas emissions, increasing energy efficiency, and promoting the integration of renewable energy sources, education providers need to accelerate the training of engineering talents and energy professionals in digital skills.

The AI4GreenDeal project aims to design and deliver a 120 ECTS Master's double degree programme that uniquely combines energy domain knowledge with data & AI skills, and innovation and entrepreneurship skills. The project also plans to offer flexible and stackable self-standing modules certifying a wider audience of learners, including working professionals.

The project will implement a comprehensive curriculum based on the InnoEnergy Data Science for Energy Engineers skills framework validated by an industry advisory board. It will employ active learning and project- and challenge-based learning approaches, co-designed and co-delivered with industry partners.

The project will use a part of the grant to award scholarships, fee waivers and mobility budgets to applicants, and aims to reach a minimum of 150 students graduating or starting the full degree programme, and 300 learners obtaining a professional certificate by the end of the project. A financial sustainability plan will guarantee the continuation of the new educational offering by InnoEnergy Masters+.

THE AI4GREENDEAL CONSORTIUM

The project consortium consists of 3 university partners, 1 business school, 1 research partner and 8 industry partners from 10 EU countries, coordinated by InnoEnergy. The industry partners will take an active role in the design, implementation and dissemination activities ensuring maximum fit to the skill gap for advanced data & AI skills in sustainable energy.

Partners	Acronym
KIC INNOENERGY SE	**KIC SE**
THE INSTITUTE OF SUSTAINABLE ENERGYSTICHTING	**ISE**
KIC INNOENERGY IBERIA SL	**KIC IE IBERIA**
KATHOLIEKE UNIVERSITEIT LEUVEN	**KU Leuven**
UNIVERSITAT POLITECNICA DE CATALUNYA	**UPC**
INSTITUT POLYTECHNIQUE DE GRENOBLE	**INP GRENOBLE**
FUNDACION ESADE	**ESADE**
NIIT (Ireland) Limited	**NIIT (IRL) Limited**
WATT-IS SA	**WATT-IS SA**
KIMITISIK B.V	**Kimitisik**
TOKWISE OOD	**TokWise Ltd.**
GeoBeholder OU	**Beholder**
Ento Labs ApS	**Ento Labs ApS**
ASTROKYON SP.ZO.O.	**Astrokyon**
AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	**CSIC**

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Initial Quality assessment report, 2026.

Deliverable D1.6: “Initial Quality assessment report”

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1. INTRODUCTION

1.1. Purpose and scope of the deliverable

This deliverable (D1.6 – Initial Quality Assessment Report) presents the results of the first quality assessment conducted within the AI4GreenDeal project, covering the first year of implementation (**September 2025 – August 2026**), complemented by the initial external quality assessment carried out by the project's Advisory Board in September 2026, as well as an internal industry partner feedback in October 2026.

In accordance with the Grant Agreement and the objectives of Work Package 1 (WP1) – Project Management, Quality Assurance & Impact Assessment, the purpose of this report is to provide an initial evaluation of the project's implementation, identify potential challenges and areas for improvement, and formulate recommendations to support the effective achievement of its objectives, expected results and Key Performance Indicators (KPIs).

The assessment addresses five main dimensions, as established in the Grant Agreement:

- **Efficiency -** assessment of progress in implementing the planned activities, the effectiveness of project coordination and management processes and the timely delivery of expected outputs, milestones and deliverables.
- **Relevance -** evaluation of the alignment of project activities and outputs with the identified skills needs, stakeholder expectations and the educational objectives of the new Master's degree programme and self-standing learning modules.
- **Financial management:** Preliminary assessment of the financial management arrangements and procedures established within the consortium, including financial monitoring, internal controls and the implementation framework for Financial Support to Third Parties (FSTP).
- **Impact:** Initial assessment of progress towards the project's objectives, expected results and KPIs, considering the achievements recorded during the first implementation year and their potential contribution to the project's longer-term impact.
- **Sustainability:** Preliminary consideration of the factors supporting the long-term continuation and uptake of the educational offering, including institutional commitment, industry engagement, market demand and financial sustainability.

The assessment draws on both qualitative and quantitative information collected through the project's quality assurance and risk management mechanisms. In particular, it integrates the findings and recommendations of the first Advisory Board Quality Assessment, feedback from AI4GreenDeal industry partners, the outcomes of the quarterly risk monitoring exercises consolidated in the project's Risk Register, and the feedback collected from Work Package Leaders through the Annual Risk Assessment Questionnaire.

As this report represents the first quality assessment of AI4GreenDeal, **its primary focus is on the initial implementation processes, the relevance and quality of the programme design, the identification and management of emerging risks, and the project's readiness to achieve its expected results**. Certain aspects, particularly those related to the actual impact and long-term sustainability of the educational programme, will be assessed more comprehensively in subsequent project phases, when additional implementation results and performance data become available.

Ultimately, this report aims to support a process of **continuous quality improvement**, ensuring that the findings of the initial assessment are translated into practical recommendations and, where necessary, corrective actions. These recommendations will inform evidence-based decision-making by the Project Coordinator, Work Package Leaders and relevant project governance bodies, helping the consortium address identified challenges, strengthen the quality of project outputs and maintain progress towards the achievement of AI4GreenDeal's objectives throughout the remaining implementation period.

1.2. Quality assurance and risk management framework

The AI4GreenDeal project has established an integrated quality assurance and risk management framework under Work Package 1 (WP1) – Project Management, Quality Assurance & Impact Assessment, with the aim of ensuring the effective implementation of project activities, the timely delivery of outputs and the achievement of the expected objectives and Key Performance Indicators (KPIs). This framework combines continuous internal monitoring, structured risk management procedures and external quality assessment to identify potential challenges, support corrective actions and promote continuous improvement throughout the project's implementation.

The overall approach is based on the provisions of the Grant Agreement and the governance and monitoring procedures established in Deliverable D1.2 – *Project Governance & Risk Mitigation Plan* (February 2026). The framework establishes clear roles and responsibilities for the Project Coordinator, Project Management Board (PMB), Consortium Board (CB), Quality Management Team (QMT) and Work Package (WP) Leaders. These

governance bodies work together to monitor implementation progress, address quality-related issues, manage emerging risks and ensure that appropriate decisions and corrective measures are taken when necessary.

To support the effective management and quality assurance of the AI4GreenDeal project, the following final documents were also shared with the Partners on 29 May 2026:

- Quality Assurance (QA) Plan
- KPI Tracker, including KPI owners and reporting responsibilities
- Deliverables Quality Assurance Timeline

The purpose of these documents is to provide a clear overview of our quality assurance processes, performance monitoring responsibilities, and internal review timelines to ensure the timely delivery of high-quality project outputs.

The Quality Assurance activities

The AI4GreenDeal partnership employs a 5-tier internal quality assurance organisational structure, consisting of:

- A **Quality Assurance Team** that is responsible for the overall coordination and overseeing of quality assurance and control procedures. The Quality Assurance Team includes Schuman Associates (2 people), Machteld van Rijsingen, Inge de Waard and Eylem Tasdemir from InnoEnergy.
- **Work Package Leaders & Co Leaders** that lead quality management procedures for their Work Package (WP), assuming authority and taking the ultimate responsibility for the timely delivery and expected quality of WP deliverables.
- **Steering Committee,** comprising representatives from all academic partners to oversee the implementation of the programme.
- **Contributing Partners** who are involved in task implementation in the different Work Packages and are assigned specific deliverables and facilitate quality management procedures through self-assessment.
- **The Industry Advisory Board** who oversees and reviews key project outputs and assess them from an external industry perspective.

The specific roles of each organizational structure were presented during the Second Consortium Meeting on 11 May 2026.

The Quality Assurance Process aims to ensure a consistent and qualitative assessment of the various Work Packages and activities during the project. It is based on a set of components, which are summarised below.

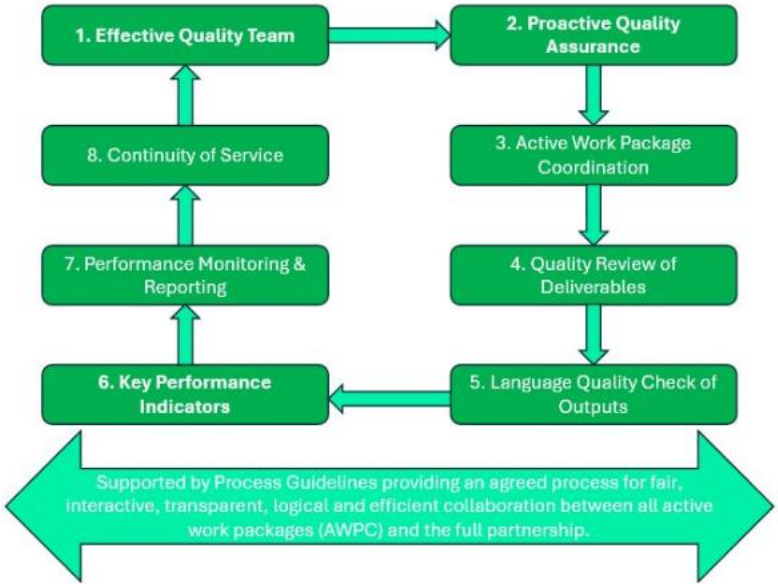

FIGURE 1. ***AI4GREENDEAL QUALITY ASSURANCE PROCESS' COMPONENTS***

This includes continuous collaboration with WP Leaders, internal review of project outputs and identification of potential deviations or opportunities for improvement.

Risk Management activities

Risk management constitutes an integral part of this process. As established in D1.2, the project applies a structured methodology for identifying, assessing, mitigating and monitoring risks that may affect project implementation and the achievement of its objectives. Risk monitoring is carried out through regular bi-weekly WP Leader meetings, quarterly risk assessments and an annual questionnaire distributed to WP Leaders as presented at Figure 2.

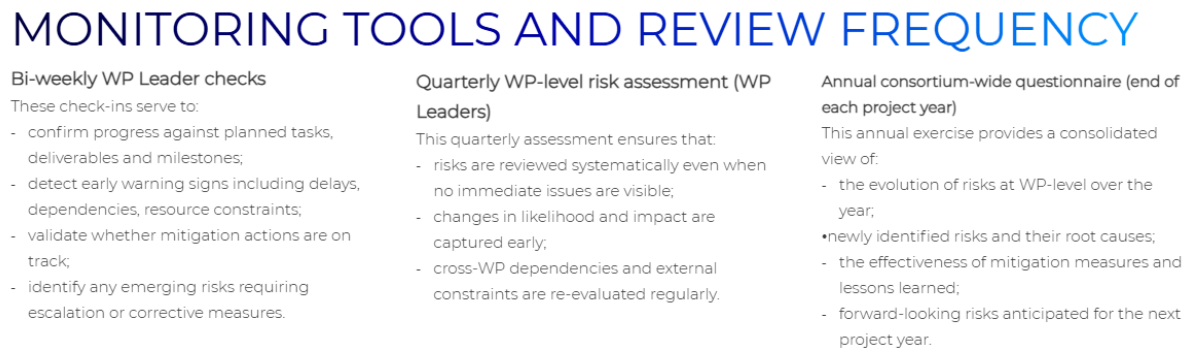

FIGURE 2 ***AI4GREENDEAL MONITORING TOOLS***

The information collected is consolidated in the project's Risk Register, which serves as the main tool for tracking risk evolution, mitigation measures and responsibilities. Risks requiring additional coordination or strategic decisions are escalated through the established project governance structures.

External Quality Assessment

In parallel, **external quality assessment** is ensured through the project's Advisory Board, which provides independent expert feedback on the relevance, quality and long-term sustainability of the educational offering. The Advisory Board's assessment focuses on key aspects of the project, including curriculum design, alignment with industry needs, industry involvement, educational quality and sustainability. At least three assessment rounds are foreseen throughout the project, providing opportunities to review progress and formulate recommendations at different implementation stages. The findings of these reviews complement the internal monitoring mechanisms by introducing external perspectives and identifying opportunities to strengthen the quality and relevance of project results.

Together, these mechanisms provide a coordinated approach to project quality and performance management. Continuous monitoring enables the early identification of implementation issues, risk management supports the definition and follow-up of mitigation measures, and external quality assessment provides additional expert recommendations to improve project outputs and expected outcomes. The findings are brought into the project's governance and decision-making processes, allowing the consortium to adjust its implementation approach where necessary and maintain alignment with the objectives and requirements established in the Grant Agreement.

1.3. Assessment period and sources of information

As also specified in Section 1.1, this Initial Quality Assessment Report covers the **first year of implementation of the AI4GreenDeal project (September 2025 – August 2026, M1–M12)**. It provides an overview of the quality assurance and risk management activities conducted during this period, complemented by relevant assessments and supporting documentation prepared between February and October 2026, ahead of the submission of Deliverable D1.6 in Month 14.

The assessment is based on a combination of qualitative and quantitative information collected through the project's established monitoring, quality assurance and risk management processes. In particular, the following sources of information have been considered:

- **First Advisory Board Quality Assessment Report (September–October 2026):** The report consolidates the external expert feedback collected during the first Advisory Board meeting, held on 21 September 2026, and through subsequent written contributions from Advisory Board members. The assessment focuses primarily on the quality and relevance of the proposed Master's degree curriculum, the

Business, Innovation and Entrepreneurship (BIE) journey, and the online stackable modules. It also examines their alignment with industry needs and identifies opportunities to strengthen the educational content, enhance industry involvement, and maximise the programme's long-term impact. On 5 October, the final consolidated report was shared with the external experts for any final comments and corrections. The resulting findings and recommendations provide an important external perspective on the project's initial achievements and areas for improvement.

- **The Industrial Partner Feedback Report**: the report compiles written feedback gathered from AI4GreenDeal's industrial partners on the Advanced Energy Systems and AI Master's programme curriculum, the Business Innovation and Entrepreneurship (BIE) journey, and the online stackable modules.
- **Quarterly Risk Assessments and Consolidated Risk Register:** The project's Risk Register, initially developed on the basis of the risks identified in the Grant Agreement, has been progressively updated through the quarterly risk monitoring exercises conducted with WP Leaders. The Register provides an overview of the main risks identified during the first implementation year, their likelihood and potential impact, proposed mitigation measures and available status information. This documentation serves as the basis for assessing the project's risk exposure and identifying priority areas requiring further monitoring or corrective action.
- **Annual Risk Assessment & Monitoring Questionnaire:** In accordance with the monitoring procedures established in D1.2 – *Project Governance & Risk Mitigation Plan*, an annual questionnaire was distributed to WP Leaders at the end of the first project year. The questionnaire collects feedback on the evolution of risks within each Work Package, risks that materialised during implementation, the effectiveness of mitigation measures and lessons learned. The consolidated and analysed results complement the quarterly risk assessments and contribute to identifying priorities for the second implementation year.
- **Preliminary Financial Management and FSTP Implementation Documentation:** The assessment also considers the financial management arrangements established during the project's initial implementation phase, with particular attention to the preparatory work concerning Financial Support to Third Parties (FSTP). This includes the internal explanatory note developed to clarify the operational and administrative procedures for managing scholarships, tuition fee waivers and other forms of financial support to students, in accordance with the Grant Agreement and applicable EU funding requirements.

- **Project Implementation Monitoring and KPI Framework:** Additional information is drawn from the project's ongoing implementation monitoring activities, including coordination with WP Leaders, monitoring of planned tasks, milestones and deliverables, and the KPI framework established under the project's Quality Assurance Plan. The KPI tracking framework defines the expected results, interim targets, responsible partners and measurement methods, providing a reference for evaluating initial implementation progress and identifying potential deviations from the planned objectives.

The above sources provide the evidence base for the initial assessment of project efficiency, relevance, financial management, impact and sustainability. This combination of internal monitoring information and external expert feedback seeks to provide a balanced evaluation of the project's first implementation year, as well as to identify practical recommendations to strengthen performance and quality during subsequent phases.

Given the early stage of implementation, **the assessment primarily focuses on the progress of preparatory and development activities, the effectiveness of the established management and monitoring processes, and the identification of emerging risks and opportunities for improvement**. Where quantitative results or longer-term impact evidence are not yet available, the assessment relies on the progress and qualitative information collected to date, while recognising that a more comprehensive evaluation will be possible as the project advances.

2. ADVISORY BOARD QUALITY ASSESSMENT

2.1. Advisory Board composition and first assessment round

In Section 1.2, we have presented the role of the Advisory Board (AB), which acts as an external and strategic support body, contributing to the quality, relevance and long-term sustainability of the project. Its independent expert feedback concerns the **educational offering, particularly regarding curriculum design, alignment with industry needs, industry involvement and the expected impact of the programme**.

The composition of the Advisory Board was confirmed during the second Consortium Meeting, held on 11 May 2026. The Board brings together seven experts from industry, academia and the wider InnoEnergy ecosystem, ensuring a combination of perspectives on energy systems, artificial intelligence, technological innovation and educational development. The confirmed members are Johan Driesen (KU Leuven), Frank Gielen (InnoEnergy), Mihir Sarkar (ENGIE R&I), Alicja Stankiewicz (COAT-IT), Ronda Zelezny-Green (Datocracy AI), Piotr Grudzien (Cellect) and Francisco Giacometto (Plan Scale Data Solutions). The Board's composition may be further expanded during the project to incorporate additional expertise and respond to emerging needs.

The **first Advisory Board meeting took place online on 21 September 2026**, chaired by Eylem Tasdemir, Project Coordinator at InnoEnergy. All seven confirmed Advisory Board members attended, alongside representatives of the project management and academic teams, including KU Leuven, InnoEnergy and Schuman Associates, supporting the project's quality assurance and risk management activities.

This first assessment round focused primarily on reviewing the design and relevance of the proposed *Master's in Advanced Energy Systems and AI (AESAI)* programme, while also gathering initial feedback on industry involvement and the Business, Innovation and Entrepreneurship component and online stackable modules. The meeting included presentations on the project's status, the Master's curriculum structure, the common foundation in Year 1, the specialisations foreseen for Year 2, the online stackable modules and the Business, Innovation and Entrepreneurship journey. These presentations were followed by an extended open discussion and question-and-answer session, allowing Advisory Board members to provide their initial observations and recommendations.

To support an informed and structured assessment, a common set of reference materials was circulated to Advisory Board members in advance of the meeting. These consisted of the following three deliverables and a presentation summarising the current status of the educational offering:

- D2.1 – *Skills Gap Analysis and Product Strategy*,
- D2.2 – *Programme Structure and Detailed Curriculum per University*,
- D6.1 – *Programme Innovation and Entrepreneurship Strategy Guidelines*.

The materials were accompanied by guiding questions inviting members to evaluate the programme's alignment with current and emerging industry skills needs, the balance between theoretical and practical competencies, potential gaps in the curriculum, opportunities for industry engagement and the applicability of learning outcomes in professional contexts.

The **evidence collection process combined two complementary sources of qualitative feedback**: the discussions held during the Advisory Board meeting and structured written submissions subsequently provided by three Advisory Board members. Written contributions were received from Alicja Stankiewicz, Piotr Grudzien and Francisco Giacometto, offering more detailed observations and recommendations on curriculum content, practical AI applications, industry requirements and opportunities for strengthening the programme. The contributions of the other Advisory Board members were captured through the live discussion and documented in the meeting notes.

The feedback collected through both channels was consolidated in the *Advisory Board Quality Assessment Report – Round 1 (October 2026)*. Rather than presenting individual contributions separately, the report organises the findings thematically, identifying areas of agreement among experts, strengths validated by the Board, and potential gaps or improvements requiring further consideration. Where relevant, recommendations are attributed to the contributing members, distinguishing observations raised during the meeting from those developed through written submissions.

The consolidated assessment provides an evidence base for the relevant Work Package Leaders, particularly WP2 (Curriculum Design and Accreditation), WP3 (Programme Development) and WP6 (Programme Innovation, Entrepreneurship and Sustainability), to evaluate the recommendations and determine how they may be incorporated into subsequent curriculum development, accreditation and programme delivery activities.

As this first assessment round took place during the initial programme development phase, its emphasis was placed on curriculum relevance, educational quality and industry alignment.

2.2. Strengths identified by the Advisory Board

The first Advisory Board assessment highlighted several positive aspects of the proposed Master's in Advanced Energy Systems and AI (AESAI) programme, the online stackable modules and the Business, Innovation & Entrepreneurship journey:

i. The **clear alignment between the skills gaps identified in Deliverable D2.1 – Skills Gap Analysis and Product Strategy and the learning outcomes, courses and online modules developed under Deliverable D2.2 – Programme Structure and Detailed Curriculum per University**. In particular, Francisco Giacometto positively assessed the systematic integration of the four identified skills gaps—digital thinking in energy systems, broad AI literacy, specialised algorithm knowledge and big data analytics—into the proposed educational offering. The programme's structure, combining a common foundation in AI and digital competencies during Year 1 with more specialised learning opportunities during Year 2, was also considered well aligned with industry demand for both broad AI literacy among energy professionals and advanced technical expertise for more specialised roles.

ii. The value of **strengthening the core curriculum with essential technical competencies**, particularly the inclusion of optimisation, machine learning and big data analytics as mandatory rather than elective subjects. Piotr Grudzien highlighted this approach as one of the strongest elements of the curriculum design, alongside the integration of two complementary AI profiles within the Business, Innovation and Entrepreneurship (BIE) track: *AI as Co-Founder* and *AI as Change Agent*. These were considered particularly relevant to the challenges organisations face when adopting and integrating AI technologies into their operations.

iii. The **Business, Innovation and Entrepreneurship component** received further positive feedback for its practical and structured approach. In particular, the BIE Applied Project, offering two pathways—*New Venture Creation* and *Transformational Challenge*—was considered a well-designed mechanism for connecting academic learning with entrepreneurial and organisational challenges. The Green Seed Journey competition was also recognised as providing a credible opportunity for participants to continue developing their entrepreneurial initiatives beyond the programme.

iv. The programme's **commitment to accessibility and inclusion**, particularly the target of reaching 30% of learners who are female or from lower socio-economic backgrounds. This objective was assessed as well grounded in sector evidence and realistically achievable, supported by the programme's English-language delivery, the availability of financial support through the FSTP scheme and the flexibility offered by the online learning modules.

v. The **distinctive value proposition of the AESAI programme**, which combines expertise in energy systems and artificial intelligence within a single Master's degree. As highlighted by Hussain Kazmi during the meeting, this interdisciplinary approach represents an important added value, enabling students to acquire complementary competencies in two areas that are often addressed separately in traditional educational programmes.

Overall, these positive assessments confirm the relevance of combining advanced technical competencies, practical industry applications, innovation and entrepreneurship, and inclusive learning opportunities to address the evolving skills needs of the European energy sector.

2.3. Areas identified for improvement

The first Advisory Board assessment also identified opportunities to further strengthen the curriculum, enhance its practical relevance and ensure its continued alignment with the rapidly evolving needs of the energy and artificial intelligence sectors. The main areas for improvement, emerging from both the Advisory Board meeting discussions and the subsequent written contributions, are summarised below.

Keeping the curriculum aligned with rapid technological developments

One of the main concerns raised by Advisory Board members was the rapid pace of technological change in artificial intelligence and the need to ensure that the curriculum remains relevant over time. Members emphasised the importance of equipping students with strong foundations in critical thinking, problem-solving and transferable methodologies, rather than focusing excessively on specific tools or technologies that may quickly become outdated. To address this challenge, Francisco Giacometto proposed establishing a regular curriculum review mechanism, potentially on a semester basis, incorporating feedback from industry partners, alumni and emerging technological developments. Such an approach would allow the consortium to continuously update learning content and specialisations while maintaining consistency across participating universities.

Strengthening practical AI deployment and systems integration competencies

The assessment highlighted opportunities to reinforce the practical and operational dimensions of the curriculum, particularly by moving beyond AI modelling and analysis towards the actual development, deployment and maintenance of AI solutions in real-world environments. Piotr Grudzien and Francisco Giacometto identified the need for stronger learning outcomes covering software versioning, testing, monitoring of deployed AI models and integration with existing operational technologies and legacy systems, including SCADA infrastructure. They also suggested introducing more

opportunities for students to work directly with industry partners on real operational challenges, including client-facing solution development, prototyping and the integration of AI applications into existing organisational environments.

Responsible AI, governance and regulatory alignment

A particularly prominent area for improvement concerned the integration of responsible AI principles, governance and regulatory compliance throughout the programme. All three Advisory Board members who provided written submissions highlighted the need to go beyond the responsible use of generative AI and address the specific requirements associated with deploying AI solutions in critical energy infrastructure. Suggested improvements included stronger coverage of explainability, accountability, human oversight, auditability and compliance with relevant European regulatory frameworks, including the EU AI Act, the NIS2 Directive and the Data Act. Alicja Stankiewicz also recommended incorporating practical AI governance frameworks, such as ISO/IEC 42001, to prepare students for implementing trustworthy AI solutions in energy-sector organisations.

Overall, the three independent Advisory Board members identified the same structural gap: responsible AI content that covers generative-AI hygiene well, but does not yet equip participants for AI governance, regulatory compliance and accountable deployment in critical energy infrastructure.

Cybersecurity and grid resilience as a transversal competency

The Advisory Board recommended treating cybersecurity and grid resilience as transversal competencies across the programme's specialisations.

Particular attention was given to operational technology security, secure AI deployment, cyber risk management and the resilience of critical energy infrastructure. Additional recommendations concerned the safe deployment of agentic and multi-agent AI systems in grid operations, as well as broader energy-system challenges, including security of supply and the increasing pressure that AI infrastructure and data centres may place on electricity networks.

AI procurement, vendor evaluation and organisational adoption

Another area identified for improvement concerned the ability of graduates to assess, select and manage third-party AI solutions. Advisory Board members observed that many energy companies are likely to adopt AI technologies through external providers rather than developing all solutions internally. Consequently, they recommended strengthening competencies related to AI procurement, vendor assessment, performance verification and the monitoring of deployed systems over time. Further emphasis was also suggested on organisational readiness, change

management and the human factors influencing the successful adoption of AI technologies within companies and public-sector organisations.

Year 2 specialisation coverage

The Advisory Board also identified opportunities to expand the scope of the Year 2 specialisations to address additional areas of industry demand. In particular, Piotr Grudzien and Francisco Giacometto observed that the current specialisations are predominantly focused on electricity grid-related applications, while other relevant areas, such as energy trading, storage optimisation, renewable asset management and operation and maintenance, receive comparatively limited attention. They suggested exploring a dedicated *AI for Renewable Asset Management* specialisation or online learning pathway, potentially involving industry partners such as TokWise in its design and development.

Enhancing the Business, Innovation and Entrepreneurship Applied Project

Although the Business, Innovation and Entrepreneurship component received positive feedback, the Advisory Board suggested reinforcing its practical outcomes. In particular, members recommended that the *Transformational Challenge* pathway should not be limited to producing transformation roadmaps and recommendations but should, where feasible, also lead to working prototypes or proof-of-concept solutions developed in collaboration with industry partners. Such an approach would provide students with more direct experience in translating innovative ideas into practical applications.

Strengthening industry engagement and post-graduation opportunities

Advisory Board members highlighted the importance of maintaining close connections between the educational programme and the wider industrial and technological ecosystem. Recommendations included broadening engagement beyond established energy companies to involve AI-native companies, technology providers and innovative start-ups operating at the intersection of AI and energy. These organisations could contribute practical challenges, guest lectures, hackathons, site visits and other learning opportunities, helping students remain exposed to emerging technologies and industry practices.

Members also proposed exploring structured post-graduation rotation opportunities with industrial partners, allowing graduates to gain additional professional experience while providing companies with access to qualified talent. Such initiatives could further strengthen the programme's employability outcomes and support lasting collaboration between academic and industry partners.

Improving the delivery and completion of online learning modules

The assessment also raised considerations regarding the effectiveness of the self-standing online modules targeting working professionals. In particular, members noted that achieving the project's 80% completion rate

target could be challenging for asynchronous learning activities without sufficient learner engagement and accountability mechanisms. To address this risk, they proposed exploring employer-sponsored learning cohorts and incorporating practical workplace assignments into the modules, enabling participants to apply the competencies acquired directly in their professional environments. These measures could contribute to improving learner engagement, course completion and the practical impact of the training.

Promoting equity, accessibility and inclusion

Building on the programme's existing commitment to learner inclusion, Alicja Stankiewicz suggested extending accessibility considerations to the organisations and communities that could benefit from AI applications developed by future graduates. Particular attention was given to smaller municipalities and regions with limited financial and technical resources, which may face greater challenges in adopting advanced AI solutions. The assessment therefore recommended strengthening the curriculum's focus on affordable, scalable and inclusive AI applications, particularly within the Smart Cities specialisation.

Further improvements were suggested concerning data governance, data ownership, data quality and interoperability across organisations and energy systems. These competencies were considered essential for ensuring that AI solutions can be effectively implemented in complex operational environments and adapted to different institutional and technological contexts.

Capital access for new ventures

Further recommendations concerned strengthening access to investment opportunities for student ventures. Francisco Giacometto suggested establishing more structured connections between New Venture Creation teams and potential investors, including business angels, corporate venture capital entities and innovation teams within industry partner organisations. This would extend opportunities for accessing financing and entrepreneurial support beyond the participants selected through the Green Seed Journey competition.

Broadening the industry and AI ecosystem around the Advisory Board

The Advisory Board members were invited to propose projects, hackathons, guest lectures or site visits directly to the project team at any time; this invitation stands as an open channel for members to act on the ecosystem-broadening points raised in the report.

As a first suggestion, Mihir Sarkar noted the potential contribution of start-ups working at the intersection of AI and energy. Such organisations could expose learners to emerging applications, rapidly evolving technologies and new approaches to improving the energy ecosystem, complementing collaboration with established energy and technology companies.

Clarifying selected aspects of the curriculum structure (Work Package 2)

Finally, the Advisory Board raised a number of questions concerning the distribution of core and elective courses within the first year of the Master's programme. In particular, Piotr Grudzien and Francisco Giacometto requested further clarification regarding the proportion of Year 1 ECTS allocated to the common AI and digital curriculum across the participating universities, and how this affects the balance between general foundational competencies and specialised learning. These observations were identified as open questions requiring clarification from WP2 rather than confirmed shortcomings in the existing curriculum design.

Overall, the Advisory Board's feedback identifies several opportunities to strengthen the programme's **technical depth, practical applicability, regulatory awareness, industry engagement and long-term relevance**. A recurring theme across the assessment was the importance of preparing graduates not only to understand and apply AI technologies, but also to develop, evaluate, deploy and manage AI solutions responsibly within real-world energy systems and organisational environments.

These findings provide valuable input for the consortium's continuous quality improvement process. The proposed improvements will require further consideration by the relevant Work Package Leaders, taking into account curriculum development priorities, accreditation requirements, available resources and implementation timelines. The consolidated recommendations and proposed follow-up actions are presented in the following section.

2.4. Consolidated recommendations and proposed follow-up

The first Advisory Board Quality Assessment Report consolidated the feedback collected into **19 recommendations** for consideration by the AI4GreenDeal consortium. These recommendations aim to strengthen the programme's technical and educational quality, ensure its continued relevance to evolving industry needs, reinforce practical learning opportunities and support its long-term impact and sustainability.

The recommendations concern several Work Packages, particularly WP2 (Curriculum Design and Accreditation), WP3 (Programme Development), WP6 (Programme Innovation, Entrepreneurship and Sustainability), and WP5 (Programme Dissemination, Marketing and Recruitment Campaign), as well as Project Coordination and the Advisory Board.

For more details on the specific recommendations, please refer to Annex 1 - Advisory Board Report.

As shown in the list under this annex, several recommendations concern more than one WP. This grouping does not constitute a formal reassignment of responsibilities.

The largest group of recommendations concerns WP2, reflecting the focus of the first Advisory Board assessment on curriculum design and the relevance of the proposed educational offering. Furthermore, several recommendations focus on enhancing the practical impact of the Business, Innovation and Entrepreneurship component and strengthening connections between the educational programme and the wider industrial ecosystem (WP6).

The recommendations outlined above provide a basis for strengthening the quality and relevance of AI4GreenDeal during the next implementation phase. However, as explicitly stated in the Advisory Board Quality Assessment Report, **the recommendations represent proposals for consortium consideration rather than decisions already adopted**.

Each recommendation will therefore require further assessment by the relevant Work Package Leaders, taking into account its relevance, feasibility, accreditation requirements, resource implications and implementation timeline. Where recommendations are accepted, the corresponding follow-up actions should be incorporated into the relevant WP activities and monitored through the project's established coordination and quality assurance mechanisms.

This approach will help ensure that the Advisory Board's external feedback contributes to continuous improvement, while maintaining consistency with the project's objectives, commitments and implementation schedule. Progress in addressing the recommendations can subsequently be reviewed through the project's quality monitoring activities and future Advisory Board assessment rounds.

3. INDUSTRY PARTNER QUALITY ASSESSMENT

3.1. Assessment approach

In addition to the external assessment conducted by the Advisory Board, the AI4GreenDeal consortium collected structured written feedback from its industrial partners to further evaluate the **relevance, quality and practical applicability of the proposed educational offering**. The assessment focused specifically on the Master's in Advanced Energy Systems and AI (AESAI) programme, the Business, Innovation and Entrepreneurship (BIE) journey, and the online stackable modules, with particular attention to their alignment with current and emerging industry skills needs.

Written contributions were received from **five industrial partners: Kimitisik, Astrokyon, TokWise, Watt-IS and Ento**. Their responses were consolidated by Project Coordination into the *Industrial Partner Feedback Report (October 2026)*, which is included under Annex 2 of this deliverable.

Unlike the Advisory Board assessment, which combined meeting discussions with subsequent written contributions, this exercise was based exclusively on written submissions.

The assessment provides a valuable complementary perspective on the programme's educational quality, drawing directly on the operational experience and skills requirements of companies active in the energy and AI sectors. The following sections summarise the main strengths validated by the industrial partners, the areas identified for improvement and the resulting recommendations for consideration by the consortium.

3.2. Strengths Identified by Industrial Partners

The Industrial Partner Feedback Assessment highlighted several positive aspects of the proposed Master's in Advanced Energy Systems and AI (AESAI) programme, particularly its **alignment with industry skills needs, the relevance of its technical content and its emphasis on applied learning, innovation and entrepreneurship**.

A key strength recognised by industrial partners was the **clear alignment between the skills gaps identified in D2.1 – Skills Gap Analysis and Product Strategy and the learning outcomes and curriculum developed**

under D2.2 – Programme Structure and Detailed Curriculum per University. In particular, Watt-IS confirmed that the four identified skills gaps reflect the competencies sought when recruiting professionals, while TokWise considered them consistent with the requirements of an AI-driven energy trading company. Ento also positively assessed the integration of digital competencies across the curriculum, highlighting the introduction of mandatory digital courses in Year 1, the common *Energy and AI: Advanced* course and the clear connection between the newly developed courses and the identified skills gaps.

The **relevance and technical quality of the proposed educational content** were also positively assessed. Astrokyon highlighted the coverage of forecasting, optimisation, power systems and energy markets across the participating universities, including the application of machine learning to operational, market and environmental energy data. TokWise particularly valued the inclusion of value-oriented forecasting and decision-focused learning, recognising the importance of evaluating AI models according to their contribution to better operational decisions rather than predictive accuracy alone. Ento also highlighted the relevance of specific advanced technical topics, including causal machine learning, physics-informed networks and flexibility verification.

Another positive aspect concerned the programme's **emphasis on practical learning, innovation and entrepreneurship**. Kimitisik recognised the importance of developing an entrepreneurial mindset alongside technical expertise, positively assessing the programme's use of challenges and practical use cases to encourage innovation and value creation. Similarly, Watt-IS considered the integration of digital tools and practice-oriented learning to be appropriate design principles. Ento also positively assessed the AI pedagogical guidelines included in D6.1 and ESADE's *AI for Innovation and Entrepreneurship* module.

Overall, the industrial partners' feedback provides **positive initial validation of the programme's educational concept and its alignment with current industry requirements**. The assessment confirms the value of combining advanced AI and energy competencies with practical applications and entrepreneurial skills. At the same time, the partners identified opportunities to further strengthen graduates' readiness for real-world professional environments, particularly regarding the deployment of AI solutions, the management of operational data and the practical application of acquired competencies. These areas are addressed in the following section.

3.3. Areas Identified for Improvement

While the Industrial Partner Feedback Assessment confirmed the overall relevance and quality of the proposed educational offering, it also identified several opportunities to **strengthen the practical applicability of the curriculum, address emerging technical competencies and better prepare participants for the operational realities of AI adoption in the energy sector**. The main areas for improvement, emerging from the five industrial partners' written contributions, are summarised below.

Strengthening practical AI deployment and operational data competencies

One of the most consistently identified areas for improvement concerned the need to strengthen competencies related to deploying and maintaining AI solutions in real operational environments. Astrokyon, TokWise and Watt-IS independently highlighted that the curriculum focuses primarily on developing and training AI models, while providing comparatively limited coverage of their implementation in production environments. They recommended incorporating more practical content on model deployment, versioning, monitoring, drift detection, retraining and integration into existing operational systems.

Closely related to this, several partners emphasised the importance of preparing students to work with **real-world energy data**, which is often incomplete, inconsistent or difficult to access. Astrokyon, Watt-IS and Ento highlighted the need for stronger competencies in data quality management, time-series processing and the development of reliable data pipelines connecting building management systems, meters, SCADA infrastructure and external APIs. Greater use of realistic operational datasets in practical assignments was recommended to better reflect the challenges encountered in professional environments.

Reinforcing agentic AI competencies, verification and critical thinking

Industrial partners also identified opportunities to strengthen the curriculum's coverage of emerging AI technologies, particularly large language models and agentic AI. Astrokyon, Watt-IS and Ento observed that these technologies are increasingly relevant to professional practice but are not yet sufficiently reflected in the core curriculum and learning outcomes.

The feedback emphasised the importance of teaching participants not only how to use AI agents, but also how to **direct, evaluate and verify AI-generated outputs**, ensuring accuracy, reliability and accountability. Suggested improvements included practical exercises involving AI-assisted coding, software testing, documentation, code review and the development of auditable AI workflows.

These observations were also reflected in the partners' responses concerning AI's impact on employment. None of the five respondents reported large-scale job displacement within their organisations. However, several observed that AI is changing professional roles by automating routine tasks and increasing the importance of critical thinking, domain

expertise, verification and human accountability. This reinforces the need to prepare graduates for AI-supported working environments in which professional judgement remains essential.

Strengthening data governance, security and regulatory awareness

The assessment identified further opportunities to strengthen competencies related to the responsible management of energy data and AI systems. Astrokyon and Watt-IS recommended more practical coverage of data protection, privacy, cybersecurity and regulatory requirements, including the GDPR, the EU AI Act, the Data Act and relevant European energy data-sharing frameworks.

Particular attention was given to the management of household and building energy data, data anonymisation, secure information sharing and the protection of operational energy infrastructure. These competencies were considered important for preparing graduates to implement AI solutions responsibly in environments involving sensitive information and critical systems.

Broadening the coverage of energy-sector applications

Several partners suggested expanding the curriculum's coverage of specific energy applications to better reflect current market demand. Watt-IS and Ento identified opportunities to strengthen the treatment of demand-side energy management, particularly smart-meter analytics, building energy management, heat pumps, district heating and energy efficiency applications. They noted that the current Year 2 specialisations place greater emphasis on electricity grids, transmission and distributed energy resources.

Astrokyon and TokWise also recommended more practical coverage of energy market operations, including day-ahead and intraday markets, balancing mechanisms, price forecasting and the use of operational market data. These additions could strengthen the programme's relevance to a broader range of professional roles within the energy sector.

Improving explainability and communication of AI results

Another area identified for improvement concerned the ability of graduates to interpret and communicate AI-generated results to non-technical audiences. TokWise and Watt-IS emphasised that the successful adoption of AI solutions depends not only on technical performance but also on the ability to explain model behaviour, communicate uncertainties and build trust among clients, operators and other stakeholders.

The partners therefore recommended incorporating more explicit learning outcomes related to AI explainability, interpretation of results and communication with different professional audiences.

Strengthening practical assessments and workplace-based learning

A particularly relevant finding concerned the need to reinforce the practical orientation of the self-standing online modules. Ento observed that several

technical modules currently emphasise learning outcomes such as explaining, describing or identifying concepts, rather than developing and delivering practical solutions. It recommended incorporating hands-on assignments requiring participants to apply their knowledge to realistic problems and datasets.

Furthermore, **four of the five industrial partners**—Astrokyon, TokWise, Watt-IS and Ento—independently proposed that professional learners should have opportunities to work directly on challenges or datasets from their own organisations. Such assignments could conclude with practical outputs, including dashboards, analytical tools, notebooks or business cases, which participants could subsequently apply in their professional activities.

Additional recommendations concerned establishing a regular update mechanism for online modules to keep pace with technological developments and exploring the possibility of offering micro-credentials linked to specific professional roles, alongside the existing ECTS-based recognition.

Enhancing the Business Innovation and Entrepreneurship component

The feedback also identified opportunities to further strengthen the Business, Innovation and Entrepreneurship (BIE) journey. In particular, Kimitisik suggested allowing participants to develop their own innovative or entrepreneurial ideas as part of the industry challenge activities, rather than relying exclusively on challenges proposed by industrial partners.

Ento provided additional observations concerning the structure and implementation of the BIE component. These included reviewing the balance between theoretical and practical assessment methods, strengthening connections between the BIE Applied Project and subsequent specialisation or thesis activities, and ensuring that AI is used to support rather than replace independent entrepreneurial thinking.

Ento also recommended incorporating more energy-specific business content, including regulatory requirements, public procurement, commercialisation challenges and business models relevant to digital and software-based energy ventures.

Overall, the Industrial Partner Feedback Assessment highlighted a **strong and recurring need to connect academic learning more closely with the practical development, deployment and management of AI solutions in real energy-sector environments**. While the programme's technical foundations were positively assessed, the partners emphasised the importance of operational data competencies, practical AI deployment, human oversight, workplace-based learning and the ability to communicate and apply results effectively.

3.4. Conclusions and Recommendations

These observations are broadly consistent with several findings of the first Advisory Board Quality Assessment, particularly regarding operational AI deployment, responsible AI, industry engagement and practical learning. The convergence between the two assessments provides additional support for considering these areas during the next stages of curriculum and programme development.

The Industrial Partner Feedback Report presents **16 consolidated recommendations** for consideration by the consortium. These focus on four main areas for improvement:

- **Strengthening technical and operational competencies** by incorporating more practical learning outcomes related to AI model deployment and maintenance, real-world data management, agentic AI, verification of AI-generated outputs, data governance and security. Additional attention is recommended for energy-specific applications, including building energy management, smart-meter analytics, energy markets and the communication of AI results to non-technical audiences.
- **Enhancing practical and workplace-based learning** by increasing the use of realistic operational datasets, hands-on assignments and applied projects that allow students and professional learners to develop solutions addressing actual industry challenges. In particular, the partners recommended that online modules conclude with practical outputs that participants can apply within their own organisations.
- **Improving the educational offering and its continued relevance to** by introducing regular updates to online modules, exploring micro-credentials linked to specific professional roles, and reviewing selected aspects of the Business Innovation and Entrepreneurship journey to reinforce practical assessment, energy-specific business competencies and opportunities for students to develop their own innovative ideas.
- **Strengthening direct industry involvement** by building on the concrete contributions offered by industrial partners, including access to datasets, practical challenges, guest lectures, hackathons, thesis topics, mentoring and participation in the assessment of student projects.

The feedback demonstrates that industrial partners can contribute not only to validating the educational offering but also to its practical implementation. The specific contributions proposed by Astrokyon, TokWise, Watt-IS and Ento represent valuable opportunities to strengthen industry collaboration and enrich the learning experience.

As a next step, the relevant Work Package Leaders will:

- determine which improvements can be incorporated into subsequent programme development activities.
- follow up directly with industrial partners to explore how their proposed contributions can be translated into concrete learning activities.

4. RISK ASSESSMENT AND MONITORING – YEAR 1

4.1. Risk management approach

The AI4GreenDeal project has established a structured and proactive risk management approach to identify, assess, mitigate and monitor potential risks that may affect the successful implementation of project activities and the achievement of its objectives. The methodology is defined in Deliverable D1.2 – *Project Governance & Risk Mitigation Plan* (February 2026) and forms an integral part of the project's overall governance and quality assurance framework under Work Package 1 (WP1).

The risk management process is designed to support the early identification of potential challenges, assess their likelihood and impact, and define appropriate mitigation and corrective measures. Particular attention is given to risks that could affect the timely delivery of project outputs, deliverables and milestones, the quality of the educational offering, stakeholder engagement and the achievement of the project's Key Performance Indicators (KPIs).

Risk identification and assessment

The risk identification process builds on the baseline risks established during the proposal preparation phase and included in the Grant Agreement, complemented by additional risks identified by Work Package Leaders during implementation.

To ensure a consistent assessment across all Work Packages, identified risks are evaluated according to two dimensions:

- **Likelihood (L):** The probability that a risk will occur, assessed on a three-level scale (1 = Low, 2 = Medium, 3 = High).
- **Severity/Impact (S):** The potential consequences of the risk for project objectives, deliverables, milestones, KPIs and overall implementation quality, assessed using the same three-level scale.

The overall risk score (R) is calculated by multiplying Likelihood by Severity/Impact (R = L × S), producing a value between 1 and 9. Based on this score, risks are classified as Low (1–3), Medium (4–6) or High/Critical (7–9). This classification determines the level of attention required and supports the prioritisation of mitigation measures.

Risk mitigation and monitoring

For each identified risk, appropriate mitigation measures are defined, together with the responsible partner or risk owner and the expected

implementation timeframe. Low-level risks are monitored within the relevant Work Package, while medium-level risks require mitigation actions and closer monitoring by the Project Management Board (PMB). High or critical risks require immediate attention and, where necessary, escalation to the Consortium Board (CB) for strategic decision-making as shown in Figure 3 below.

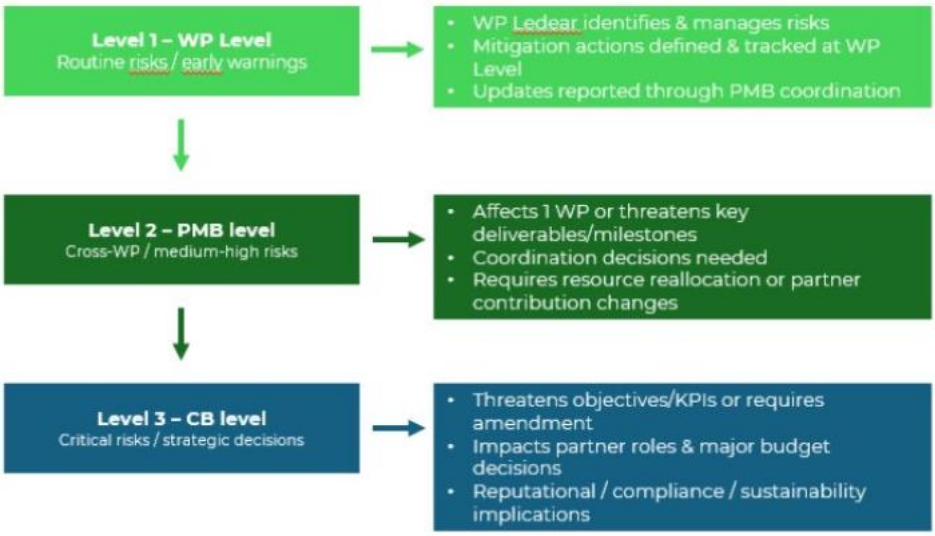

FIGURE 3 ***PROJECT RISK ESCALATION LEVELS***

Risk management is treated as a continuous process rather than a one-time assessment. Risks are periodically reassessed to reflect changes in project implementation, emerging challenges and the effectiveness of mitigation measures. Particular attention is given to the *residual risk*, representing the remaining level of exposure after mitigation actions have been implemented. This enables the consortium to determine whether the measures adopted are effective or whether further corrective action is required.

The **Risk Register** serves as the central monitoring tool, consolidating the identified risks, their assessment scores, proposed mitigation measures, assigned responsibilities and relevant updates. As established in D1.2, risk monitoring is supported by regular bi-weekly coordination meetings with WP Leaders, quarterly risk assessment exercises and an annual questionnaire distributed to WP Leaders to evaluate risk evolution, mitigation effectiveness and lessons learned.

Roles and responsibilities

Risk management is a shared responsibility across the consortium, with clearly defined roles within the project's governance framework:

- **Work Package Leaders** are responsible for identifying and monitoring risks related to their respective activities, assessing their potential impact on WP deliverables, milestones and KPIs, and proposing appropriate mitigation measures. They are also responsible

for monitoring the implementation of corrective actions within their WPs and reporting relevant developments through the established project coordination mechanisms.

- **The Project Coordinator (InnoEnergy)** oversees risk management at consortium level, ensuring that significant risks are appropriately monitored and addressed. The Coordinator facilitates communication and coordination between Work Packages, ensures that corrective actions are initiated when necessary, and manages the escalation of risks requiring decisions by the Project Management Board or Consortium Board.
- **The Quality Assurance & Risk Manager (Schuman Associates)** supports the consistent application of the risk management methodology across the consortium, consolidates WP-level inputs into the Risk Register and monitors the evolution of identified risks and the implementation of mitigation measures. The QA & Risk Manager also provides methodological guidance and recommendations to WP Leaders and Project Coordination, helping to identify recurring issues, anticipate potential challenges and support preventive and corrective actions.

This distribution of responsibilities ensures that risks are addressed at the appropriate organisational level, while maintaining an overview of the project's overall risk exposure and potential cross-WP dependencies.

Overall, the risk management approach established under D1.2 provides a common methodology for anticipating and addressing implementation challenges, supporting informed decision-making and continuous improvement. The following sections present the results of its application during the first project year, drawing on the quarterly Risk Register updates and the Annual Risk Assessment & Monitoring Questionnaire completed by WP Leaders.

4.2. Outcomes of the quarterly risk assessments

During the first year of AI4GreenDeal implementation, the consortium carried out periodic risk monitoring exercises in accordance with the methodology established in D1.2 – Project Governance & Risk Mitigation Plan. These assessments were coordinated by the Quality Assurance & Risk Manager in collaboration with the Project Coordinator and Work Package Leaders, with the aim of reviewing previously identified risks, detecting emerging implementation challenges and defining appropriate mitigation measures.

The results were consolidated in the project's Risk Register, which provides an overview of identified risks, their likelihood and severity, mitigation measures, responsible partners and available status updates. The analysis

presented below is based on the updated Risk Register, which includes risks identified during proposal preparation and subsequently reviewed or added during the first implementation phases.

The Risk Register contains **18 identified risks**, covering all six Work Packages. Of these, 13 originate from the proposal preparation phase, while 5 additional risks were identified through the quarterly assessments conducted during the first year.

Based on the risk scores recorded in the Register, the overall distribution is presented in Table 2.

Risk classification	Risk score	Number of risks	Share of total
Low	1–3	12	67%
Medium	4–6	6	33%
High/Critical	7–9	0	0%
Total		**18**	**100%**

TABLE 1 ***DISTRIBUTION OF IDENTIFIED RISKS BY RISK LEVEL***

The distribution indicates that most risks were assessed as having a relatively low overall risk score, while approximately one-third required closer monitoring or mitigation measures. Only one risk was classified as high/critical.

Main Risk Areas Identified Across the Work Packages

The risk assessments identified several recurring areas of potential concern across the project.

1. **Curriculum development, accreditation and programme preparation** (WP2 and WP3). One of the principal risk areas concerned the coordination of academic activities across partner universities, particularly the alignment of curriculum structures, accreditation requirements and the timely preparation of educational materials. The Register highlighted potential delays associated with university approval procedures, the integration of AI and data science competencies into existing curricula, and dependencies between curriculum finalisation and the development of learning materials. Data availability and interoperability between partner institutions were also identified as potential challenges.
2. **Student recruitment and programme delivery** (WP4 and WP5). Risks in these areas were mainly related to achieving the planned student enrolment targets, ensuring adequate teaching infrastructure and delivery arrangements, and managing

dependencies between academic programme development and recruitment activities. In particular, the timely availability of finalised programme information was considered important for preparing marketing materials and launching recruitment campaigns.

3. **Project coordination and financial management** (WP1). Risks identified during the proposal phase included potential budget overruns, funding delays, changes in consortium composition and disruptions to physical project meetings. These risks were generally assessed as low and remained subject to routine monitoring and contingency planning.
4. **Long-term sustainability and innovation activities** (WP6). The Register also identified risks related to maintaining programme uptake beyond the funded period and ensuring the timely development and validation of the Business Innovation and Entrepreneurship strategy. These areas require continued coordination among partners and the development of appropriate sustainability and implementation arrangements.

Evolution of Risks During the First Implementation Year

During the subsequent quarterly assessments, six additional risks were identified:

- **Three during M1–M3**, concerning curriculum alignment between universities, a potential delay affecting a WP4 milestone, and the timely preparation of programme brochures.
- **Three during M4–M6**, concerning dependencies between academic inputs and marketing activities, delays in the validation of the Business Innovation and Entrepreneurship strategy, and institutional or consortium validation rounds affecting WP4.

Some previously identified risks were also reviewed and further specified as implementation progressed. For example, the accreditation risk under WP2 was developed to reflect university-specific approval processes, while the risk of delays in curriculum delivery was further linked to dependencies between WP2, WP3 and WP4.

Overall, these developments indicate a gradual shift from general risks anticipated during proposal preparation towards more operational challenges associated with the coordination and timely delivery of interdependent activities.

Mitigation Measures, Monitoring Actions and Overall Observations

The Risk Register identifies a range of preventive and corrective measures intended to minimise the likelihood and impact of the identified risks.

The quarterly risk assessments provide evidence of an established monitoring process through which the consortium has progressively identified, assessed and documented potential challenges affecting project implementation.

The consolidated results indicate a **predominantly low-to-medium risk profile**, with the main concerns concentrated around curriculum development, accreditation, interdependencies between Work Packages, student recruitment and long-term programme sustainability.

The findings of the quarterly assessments are complemented by the Annual Risk Assessment & Monitoring Questionnaire, which provides a further opportunity to validate risk evolution, assess the effectiveness of mitigation measures and identify priorities for the second project year.

4.3. Outcomes of the Annual Risk Assessment Questionnaire

The annual risk assessment indicates a **generally stable risk environment**, although several operational challenges have emerged or materialised during the reporting period. Across the six Work Packages (WPs), three report a medium risk level (WP1, WP3 and WP6), while three remain at a low risk level (WP2, WP4 and WP5). Five WPs report stable risk levels, with **WP1 being the only work package experiencing an increase**.

As shown in Table 3 below, despite this overall stability, the assessment highlights growing interdependencies between work packages, particularly regarding online module development, personnel availability and student recruitment. While most mitigation mechanisms are considered effective, delays in WP3 demonstrate that certain risks remain difficult to control.

Work Package	Risk Level / Evolution	Assessment of Risks and Mitigation
WP1 – Project Management, Quality Assurance & Impact Assessment	**Medium – Increased**	Personnel turnover has increased project exposure. The resignation of the former WP4 leader threatens module development and could cause delay in the delivery. The forthcoming departure of the Masters+ and Skills Institute Marketing Lead could affect student recruitment which might affect the KPI2 numbers. Handover procedures, recruitment planning and financial monitoring have been implemented. Mitigation is assessed as effective, although the

		impact of personnel changes remains to be monitored.
WP2 – Curriculum Design and Accreditation	**Low – Stable**	Curriculum structures and mobility pathways have been established, reducing uncertainty. Centralised course and ECTS information, early identification of institutional constraints and Steering Committee coordination have contributed to effective risk management. Remaining issues are considered routine.
WP3 – Programme Development	**Medium – Stable**	Delays in online stackable module development materialised at M12, reflecting complex coordination requirements between partners. Mitigation has been only partially effective. Delayed industrial partner contributions have also prevented the exploration of synthetic data generation. The risk of further delays remains significant.
WP4 – Programme Management and Delivery	**Low – Stable**	No risks are directly reported as materialised under WP4. Regular communication and coordination support operational stability. However, the departure of the former WP4 leader, reported under WP1, creates an indirect risk for module delivery.
WP5 – Marketing Management	**Low – Stable**	No risks are directly reported as materialised under WP5. Nevertheless, the planned departure of a key marketing lead creates uncertainty regarding recruitment and enrolment KPIs. An automated recruitment plan and dedicated marketing resources have been established to mitigate this cross-cutting risk.
WP6 – Programme Innovation, Entrepreneurship and Sustainability	**Medium – Stable**	Although the overall risk level remains stable, the main risk has evolved. The priority is now completing two remaining stackable courses by March 2027 to enable subsequent development by NIIT.

		No risk materialisation or mitigation effectiveness assessment is documented for WP6.

TABLE 2. GENERAL ASSESSMENT PER WP BASED ON THE ANNUAL REPORT

Analysis of Risk Evolution and Mitigation Effectiveness

Personnel dependencies have emerged as a growing concern**.** WP1 reports two major staffing-related developments affecting WP4 and WP5. The resignation of the former WP4 leader (likelihood: 2/3; severity: 2/3) and the forthcoming departure of InnoEnergy's marketing lead (likelihood: 2/3; severity: 2/3) represent moderate risks. The effectiveness of the measures introduced will depend on maintaining delivery schedules and ensuring successful recruitment. However, the handover arrangements and contingency measures put in place have been considered effective and have even been praised as potential standards for adoption across the project.

Conversely, WP2 demonstrates effective risk reduction and operational consolidation. The establishment of curriculum structures, common information systems and regular coordination has helped prevent the materialisation of identified risks.

According to WP3's annual questionnaire (see Annex 4), the development of online stackable modules remains an area requiring continued monitoring, given the involvement of multiple partners and the interdependencies between the different development activities.

These risks are mainly caused by the complexity of coordinating contributions from several project partners. To mitigate this risk, a coordinated internal timeline was established with early allocation of learning blocks to partners and close coordination with WP2. These measures have helped reduce the risk, although WP3 assessed their effectiveness as partial, indicating that some exposure remains.

For the next implementation period, WP3 recommends carrying out activities in parallel wherever possible, establishing clear and commonly agreed guidelines for module development, and closely monitoring progress across partners to prevent potential bottlenecks.

A related concern was also identified by WP6, which highlighted the need to complete the preparatory work for two remaining stackable courses by the end of March 2027. WP6 did not provide a formal assessment of risk materialisation, and no mitigation is considered needed at the moment. However, this dependency reinforces the importance of timely coordination between the partners responsible for preparing and developing the educational content.

WP4 also reports effective mitigation through regular communication. This is also reflected by WP1, highlighting the benefits of early dependencies-mapping and activities tracking as well as sharing expertise across partners.

Nevertheless, the assessment reveals an important distinction between overall risk ratings and operational exposure. Despite their low and stable classifications, WP4 and WP5 remain affected by cross-cutting risks reported under WP1. Similarly, WP6's stable rating conceals a change in the nature of its principal risk. This suggests that risk evolution should be assessed not only through overall ratings but also through emerging dependencies and potential consequences for project deliverables.

4.4. Overall risk assessment and recommendations for Year 2

Overall, the project demonstrates **satisfactory risk management capacity**, supported by effective coordination mechanisms, financial monitoring and preventive planning.

However, three priorities emerge for the next reporting period:

- **Strengthen cross-WP coordination:** Monitor dependencies between curriculum development, module production and delivery, with particular attention to the online stackable modules development deadline.
- **Reduce personnel-related vulnerabilities:** Systematically identify critical personnel, designate backup experts and formalise handover procedures to safeguard operational continuity.
- **Improve risk monitoring and reporting:** Track the concrete effectiveness of mitigation actions, especially for WP3, and ensure that cross-cutting risks are consistently reflected in the assessments of affected work packages.

In conclusion, while the overall risk environment remains stable, **the materialisation of development delays and increased personnel dependencies call for sustained vigilance**. The project's ability to anticipate interdependencies, ensure continuity and implement corrective actions will be essential to achieving its deliverables and performance indicators on schedule.

The lessons learned and partners' involvement offer an optimistic foresight on how current and future risks will be managed.

5. PRELIMINARY ASSESSMENT OF PROJECT PERFORMANCE AND QUALITY

This section provides a preliminary assessment of AI4GreenDeal's performance and quality during its first year of implementation, based on the evidence presented in the previous chapters and the project's available monitoring documentation.

In accordance with the Grant Agreement, the assessment addresses five dimensions: **efficiency, relevance, financial management, impact and sustainability**. It combines findings from:

- internal industry feedback,
- project monitoring and risk assessment activities,
- the external evaluation provided by the Advisory Board, taking into account the initial stage of project implementation and the availability of supporting evidence.

As AI4GreenDeal is still in the programme development and preparation phase, the assessment focuses primarily on the effectiveness of the implementation arrangements established, the quality and relevance of the educational offering under development, and the project's readiness to achieve its expected results. A more comprehensive evaluation of actual educational outcomes, programme impact and long-term sustainability will be possible during subsequent implementation phases.

5.1. Project Implementation Efficiency

The preliminary assessment indicates that AI4GreenDeal has established **a generally effective project management and coordination framework**, providing a sound basis for the implementation of activities across the six Work Packages.

During the first project year, the consortium put in place the main governance, quality assurance and risk management arrangements foreseen in the Grant Agreement. In particular, the development of D1.2 – Project Governance & Risk Mitigation Plan, the Quality Assurance Plan, the KPI Tracker and the Deliverables Quality Assurance Timeline contributed to

establishing common procedures, defining responsibilities and strengthening the monitoring of planned activities and expected results.

The regular bi-weekly meetings of the Project Management Board (PMB), complemented by WP-level coordination and quarterly risk assessments, have facilitated communication among partners, the identification of implementation challenges and the discussion of possible corrective measures. The annual risk assessment also provides evidence that these mechanisms have supported operational stability across most Work Packages, with five out of six WPs reporting stable overall risk levels.

Nevertheless, the first year also revealed challenges affecting implementation efficiency, particularly regarding interdependencies between Work Packages and the availability of key personnel changes which affected programme management and marketing activities. The resignation of the former WP4 Leader and the anticipated departure of a key marketing representative required additional planning, handover arrangements and resource coordination. While the mitigation measures implemented were considered effective at the time of the annual assessment, their longer-term effectiveness will depend on maintaining the planned delivery and recruitment schedules.

Overall, the initial evidence suggests that **project implementation efficiency is satisfactory, with well-established coordination and monitoring mechanisms**, although certain operational challenges require continued attention. In particular, the consortium should further strengthen the monitoring of cross-WP dependencies, ensure that critical implementation responsibilities are supported by adequate backup arrangements, and maintain closer follow-up of activities affected by delays or personnel changes.

5.2. Relevance and educational quality

The preliminary assessment of relevance and educational quality is **positive**, particularly regarding the overall educational concept, its alignment with identified industry needs and the integration of advanced digital competencies into the energy sector.

The AI4GreenDeal educational offering is designed to respond to the growing demand for professionals capable of combining energy systems expertise with data science, artificial intelligence, innovation and entrepreneurship. The proposed Master's in Advanced Energy Systems and AI (AESAI), together with the self-standing online modules, addresses the skills needs identified through the project's initial analysis and aims to provide flexible learning opportunities for both students and working professionals.

The first Advisory Board Quality Assessment, conducted in September–October 2026, provided an important external validation of the programme's initial design. In particular, the assessment positively recognised the clear connection between the four skills gaps identified in D2.1 – *Skills Gap Analysis and Product Strategy* and the learning outcomes, courses and modules developed under D2.2 – *Programme Structure and Detailed Curriculum per University*.

The proposed combination of a common AI and digital skills foundation during Year 1 and more specialised learning pathways during Year 2 was also considered well aligned with industry demand for both broad AI literacy and advanced technical expertise. Furthermore, the integration of the Business, Innovation and Entrepreneurship component was positively assessed for its potential to connect academic learning with practical innovation and entrepreneurial challenges.

These findings indicate that the programme has established a **relevant and coherent educational foundation**, supported by the involvement of academic and industry stakeholders in its design.

At the same time, the Advisory Board identified several opportunities to further strengthen educational quality and practical relevance. The most significant recommendations concerned the integration of operational AI deployment and systems integration competencies, responsible AI governance and regulatory compliance, cybersecurity and grid resilience, as well as broader coverage of emerging applications such as renewable asset management, trading and energy storage.

A recurring observation was the importance of ensuring that graduates are equipped not only to understand and analyse AI technologies, but also to develop, deploy, evaluate and manage AI solutions within real operational environments. The Advisory Board also highlighted the need for regular curriculum updates to respond to the rapid evolution of AI technologies and related industry requirements.

These recommendations do not undermine the overall positive assessment of the programme's design. Rather, they identify specific improvements that could increase its practical applicability, strengthen its distinctiveness and support its continued relevance.

From a quality assurance perspective, **the establishment of an external expert review process represents an important achievement during the initial implementation phase**. The first assessment round demonstrated the value of involving industry experts in reviewing educational content and identifying potential improvements before programme delivery.

However, the longer-term effectiveness of this mechanism will depend on how the consortium evaluates and follows up on the 19 recommendations formulated by the Advisory Board. The relevant Work Package Leaders should therefore assess their feasibility, determine which improvements can be integrated into the curriculum and programme development

activities, and document the corresponding decisions and follow-up measures.

Therefore, **the next implementation phase will be important for translating this initial validation into a finalised, accredited and operational educational programme** that maintains its responsiveness to evolving industry needs.

The **Industrial Partner Feedback Assessment** further reinforced the positive evaluation of the educational offering, with five industrial partners confirming the relevance of the identified skills gaps, the technical curriculum and the emphasis on applied learning and entrepreneurship. The assessment also identified opportunities to strengthen the programme's practical orientation, particularly regarding AI model deployment and maintenance, real-world operational data management, agentic AI, verification of AI-generated outputs and workplace-based learning. The **16 consolidated recommendations** complement and reinforce several findings of the Advisory Board, demonstrating a consistent demand for graduates capable of applying AI solutions in real industrial environments. Furthermore, the concrete contributions offered by industrial partners, including datasets, practical challenges, guest lectures and thesis opportunities, provide valuable opportunities to strengthen industry involvement in programme delivery. The relevant Work Package Leaders should also assess these recommendations and explore their integration into the educational offering during the next implementation phase.

5.3. Financial management and FSTP implementation

The project’s financial management approach is based on the continuous monitoring of resources and expenditure, the use of project management and accounting tools, and internal financial reporting procedures intended to support appropriate budget control and the timely identification of potential deviations.

As Coordinator, InnoEnergy requires all partners to report the actual costs incurred by their organisations in the AI4GreenDeal project through the InnoInsight platform. Training on the platform was provided to all partners in 2025, with particular attention to partner finance teams. InnoEnergy’s finance officer requests that partners complete their cost reporting ahead of each consortium meeting, which takes place every six months. This cycle allows the Coordinator to follow each partner’s costs, contributions and commitments to the project on a regular basis, and to review partner involvement and resource allocation as implementation progresses.

The monitoring arrangements have supported the timely identification of cost developments affecting project activities. In particular, price increases for certain goods and services, such as the IT infrastructure required for the hybrid classrooms, were identified at an early stage, enabling partners to plan and allocate their resources accordingly.

A particularly relevant component of the project's financial management concerns Financial Support to Third Parties (FSTP), foreseen under WP4 to facilitate participation in the Master's degree programme and related self-standing modules through scholarships, tuition fee waivers and other approved forms of participant support.

During the initial implementation phase, preparatory work was undertaken to define the operational and administrative arrangements of the FSTP scheme. The outcome is documented in the internal explanatory note The Use of Financial Support to Third Parties (FSTP) in the AI4GreenDeal Project, which sets out the rationale for the proposed implementation model, the responsibilities of the organisations involved, the planned financial procedures and the supporting documentation required.

The Project Coordinator prepared the note and consulted the Project Officer to verify that the procedures are aligned with the requirements of the Grant Agreement, before finalising it. The final note was then shared with the academic partners who will sit on the Selection Committee responsible for nominating scholarship recipients.

The Institute of Sustainable Energy Foundation (ISE), acting as an affiliated entity, is responsible for the financial management of the FSTP scheme. The participating universities are responsible for participant enrolment, tuition fee administration and the implementation of the corresponding scholarship and fee-waiver arrangements. Academic partners contribute to the scheme through their participation in the Selection Committee.

The selection and award process comprises the following steps: publication of the FSTP call, submission and evaluation of applications against predefined eligibility and selection criteria, ranking and selection of candidates, and formal award of the relevant support measures.

Clarifications were obtained from the Project Officer and the Commission's financial services regarding the allocation of FSTP responsibilities to ISE and the treatment of financial exchanges between ISE and partner universities as internal consortium operations. These clarifications provide an important reference for the implementation model and will be reflected in the consortium's administrative arrangements and supporting documentation.

5.4. Initial impact and progress towards project objectives

During the first year, the project made progress in establishing the foundations necessary for achieving its expected results. These include the development of the educational programme structure, the identification and integration of relevant skills requirements, the preparation of the curriculum and self-standing learning modules, and the definition of the Business, Innovation and Entrepreneurship approach.

Evidence concerning student enrolment and completion, acquisition of new competencies, graduate employability, industry adoption of educational results and the sustained uptake of the programme will become available progressively during the programme delivery phase.

Overall, **AI4GreenDeal has made meaningful initial progress towards establishing the conditions necessary to achieve its expected results and impacts**. The quality and relevance of the programme design, the involvement of industry experts and the establishment of structured KPI monitoring mechanisms are positive early indicators.

5.5. Initial sustainability considerations

At this early stage of implementation, the sustainability of AI4GreenDeal can only be assessed from a preliminary perspective, focusing on the programme's potential long-term relevance, institutional and industry engagement, expected learner uptake and the arrangements being developed to support its continuation beyond the project funding period.

One of the main positive factors supporting potential sustainability is the **alignment of the educational offering with emerging skills needs in the European energy sector**. The growing importance of data science, artificial intelligence and digital technologies in energy systems provides a relevant context for the development of specialised educational programmes combining technical, interdisciplinary and entrepreneurial competencies.

The first Advisory Board assessment offered encouraging indications regarding the programme's potential market relevance. In particular, external experts positively assessed the integration of energy and AI expertise, the structured combination of foundational and specialised learning, and the practical innovation and entrepreneurship components.

The next implementation phases will be important for translating the programme's initial market relevance and institutional foundations into concrete evidence of long-term demand, educational effectiveness and financial sustainability.

6. CONCLUSIONS AND NEXT STEPS

The initial quality assessment of AI4GreenDeal indicates **satisfactory progress during the first year of implementation**, supported by established project governance, quality assurance and risk management mechanisms. The first Advisory Board assessment and the subsequent Industrial Partner Feedback Assessment confirmed the overall relevance and quality of the proposed educational offering, while identifying opportunities to strengthen its practical applicability and alignment with evolving industry needs. In particular, **both assessments highlighted the importance of strengthening operational AI competencies, working with real-world industry data, and providing more opportunities for practical, workplace-based learning. The industrial partners also offered concrete contributions, including datasets, industry challenges, guest lectures and thesis opportunities, which could further enhance the programme's practical relevance.**

At the same time, the risk assessments highlighted areas requiring continued attention, particularly delays in online module development, interdependencies between Work Packages and personnel-related challenges.

Other priorities for the next implementation period include finalising the operational arrangements for Financial Support to Third Parties (FSTP) and strengthening the monitoring of progress towards project KPIs. To address these priorities and the recommendations emerging from both the Advisory Board and Industrial Partner assessments, the consortium will review and follow up through the responsible WP Leaders, maintain regular coordination and risk monitoring activities, and implement corrective measures where necessary.

In accordance with the Grant Agreement, **subsequent quality assessments and Advisory Board reviews**, foreseen around the project's mid-term and final implementation stages, will provide further opportunities to evaluate progress, verify the effectiveness of improvement measures and assess the project's impact and long-term sustainability. This continuous assessment approach will support evidence-based decision-making and help ensure the successful achievement of AI4GreenDeal's objectives.

Annexes

Annex 1 – Advisory Board Quality Assessment Report, Round 1

Round 1 (Beginning of Project) — Curriculum Design Expert Review

Meeting Information

FIELD	DETAIL
Project Name	AI4GreenDeal
Meeting Title	1st Advisory Board Meeting
Date	21 September 2026
Location	Online
Chair and Facilitator	Eylem Tasdemir (InnoEnergy, Project Coordinator)
Recording	Session recorded for reporting purposes and preparation of these meeting notes. Participants informed at the start of the meeting and invited to flag any concerns.

Participants

The following were present at the first Advisory Board meeting:

NAME	ORGANISATION	ROLE
Eylem Tasdemir	InnoEnergy	Project Coordinator (Chair)
Hussain Kazmi	KU Leuven	AESAI Programme Director and WP2 Leader
Alberto Gonzalez Cristiano	InnoEnergy and Energy Masters+	Head of Careers, Alumni and Industry Ecosystem (BIE journey presenter)
Machteld van Rijsingen	InnoEnergy	Master's Programmes Senior Manager
Fereshteh Poormohammadi	KU Leuven	AESAI Programme Coordinator
Maxime Painot	Schumann Associates	Quality assurance and risk management support
Lucia Grilli	Schumann Associates	Project Manager, quality assurance
Johan Driesen	KU Leuven	Advisory Board member
Frank Gielen	InnoEnergy	Advisory Board member; Education Director
Francisco Javier Giacometto Torres	Plan Scale Data Solutions	Advisory Board member; CEO and Founder
Alicja Stankiewicz	COAT-IT	Advisory Board member; Co-Founder & CTO,

NAME	ORGANISATION	ROLE
Ronda Zelezny-Green PhD	Datocracy AI	Advisory Board member; CEO and Founder
Piotr Grudzien	Cellect	Advisory Board member; Head of Innovation
Mihir Sarkar	ENGIE R&I	Advisory Board member; Head of AI

1. Introduction and Purpose

Under the Grant Agreement, the Advisory Board acts as an external and strategic support body contributing to project quality, relevance and long-term sustainability (the project's continuity and impact beyond the funded period). It implements an expert review process covering the curriculum design phase, the long-term sustainability strategy and industry involvement, and the quality assurance and impact assessment of the programme. At least three quality assessment rounds are required over the project's lifetime, at the beginning, around mid-term and at the end, each to be submitted together with the project progress reports.

This report constitutes Round 1 of that requirement. It focuses primarily on the Advisory Board's curriculum design review, which was the focus of the presentations at the first meeting, while also capturing the early input on industry involvement that members raised. The long-term sustainability strategy will be a focus of later rounds, as the programme's sustainability and commercialisation model matures.

Its purpose is to bring together the Advisory Board's feedback, from the meeting discussion and from members' written submissions, into a single evidence base for the consortium, so that Work Package 2 (curriculum design, KU Leuven), Work Package 6 (Business Innovation and Entrepreneurship, ESADE) and Work Package 3 (online modules, UPC and NIIT) can assess which points to carry into the ongoing curriculum, accreditation and delivery work.

2. Advisory Board and Meeting Overview

- Advisory Board composition, confirmed at the 2nd Consortium Meeting (12 May 2026): Johan Driesen, Frank Gielen, Mihir Sarkar, Alicja Stankiewicz, Ronda Zelezny-Green, Piotr Grudzien and Francisco Giacometto, drawn from the industry partners and the wider InnoEnergy and university ecosystem. The composition remains open to new members throughout the project.
- The 1st Advisory Board Meeting was held online on 21 September 2026, chaired by Eylem Tasdemir (InnoEnergy, Project Coordinator), with all seven confirmed Advisory Board members present alongside members of the project team: Hussain Kazmi, Alberto Gonzalez Cristiano, Machteld van Rijsingen, Fereshteh Poormohammadi, Maxime Painot and Lucia Grilli.
- The meeting covered the project overview and status, the AESAI curriculum (Year 1 common foundation, Year 2 specialisations and online modules), the Business Innovation and Entrepreneurship journey, and an extended open discussion and question and answer session with the Board.
- Full attendance, agenda and discussion record: see the separate 1st Advisory Board Meeting Notes document, 21 September 2026.

3. Evidence Base and Methodology

Two evidence streams feed this report: the live discussion and open floor question and answer session at the meeting, and three structured written submissions received from three Advisory Board members afterwards. The live discussion and written submissions were reviewed together so that the report could capture both the views expressed during the meeting and the more detailed analysis provided in writing.

This two-stage feedback collection was based on a common set of materials circulated to the Advisory Board in advance. These materials comprised *D2.1 Skills Gap Analysis and Product Strategy*, *D2.2 Programme Structure and Detailed Curriculum per University*, *D6.1 Programme Innovation and Entrepreneurship Strategy Guidelines*, and a slide deck presenting the current status of the AESAI Master's Programme, the online stackable modules and the Business, Innovation & Entrepreneurship journey.

The slide deck also included guiding questions intended to focus the Board's input. Members were invited to assess the alignment of the programme and online modules with energy-sector digital and artificial intelligence skills needs; the balance between theoretical knowledge and practical, workplace-relevant competencies; any important skills gaps; the relevance of the content to current and emerging industry needs; opportunities for industry involvement; and ways of supporting participants in applying their learning in professional contexts. Members were also invited to raise any additional observations they considered relevant.

Written feedback

- Written submissions were received from Alicja Stankiewicz, Francisco Giacometto and Piotr Grudzień.

- Alicja Stankiewicz's feedback identifies an opportunity for the programme to establish a distinctive European profile in trustworthy AI for critical energy infrastructure. She recommends strengthening the practical and operational treatment of AI governance—including cyber risk management, compliance, accountability, the implementation of ISO/IEC 42001. Her feedback calls for greater emphasis on data governance and interoperability, AI procurement and vendor assessment, organisational readiness and human adoption. From an inclusion and applied-learning perspective, she highlights the need for affordable and accessible AI solutions that avoid digital exclusion, particularly for smaller municipalities and emerging smart cities, and recommends deeper engagement with industry, local government and public-sector partners through real operational challenges, datasets and implementation constraints.
- Piotr Grudzien's submission additionally draws on his organisation's collaboration hosting SELECT Project of the Year teams (2024 to 2026) and a practitioner workshop, "The Future of AI-Native Renewable Asset Management" (ESADE Barcelona, 27 August 2026), with participants from ABB, Tether, HP, Toyota Tsusho Europe, ELSEBITS and Cellect.
- Francisco Giacometto's submission explicitly builds on and cross-references several of Piotr Grudzien's points. Where the two submissions converge independently, this is noted in Section 4.

Life feedback

- Johan Driesen, Frank Gielen, Ronda Zelezny-Green and Mihir Sarkar contributed through live discussion at the meeting, captured in the meeting notes. No additional written submissions had been received from them at the time of drafting this report. Their live contributions are reflected in Section 4 and attributed accordingly.
- The discussion emphasised the need to keep the programme responsive to the rapid evolution of AI while maintaining strong foundations in critical thinking, problem-solving and transferable methodologies. Participants highlighted the importance of practical projects, real-world energy challenges, cross-domain understanding and responsible AI integration, alongside continued engagement with industry, technology companies, start-ups and public-sector partners. The discussion also underlined the value of clear specialisation choices, organisational and interpersonal skills, and an accessible programme proposition that distinctly combines energy and AI expertise.

This report groups feedback thematically rather than reproducing every point in full. For each theme, it notes which members raised it, whether it was raised independently by more than one source, and distinguishes strengths the Board validated from gaps and proposals it identified.

4. Synthesis of Advisory Board Feedback

4.1 Strengths validated by the Advisory Board

- The traceability from the four skill gaps identified in D2.1 (digital thinking in energy systems, broad AI literacy, specialised algorithm knowledge, big data analytics) through to named programme learning outcomes, courses and online modules in D2.2 was assessed as rigorous and end to end in a way few curriculum redesigns achieve (Francisco Giacometto).
- The tiered model, with a common AI-literacy foundation in Year 1 and specialised depth as Year 2 electives, was assessed as matching the sector's own bifurcated demand for broad AI literacy across all engineers alongside advanced algorithm expertise for a subset in software-oriented roles (Francisco Giacometto).
- The BIE Applied Project's two pathways (New Venture Creation and Transformational Challenge) are a well-designed structure, and the Green Seed Journey gives the venture pathway a credible continuation beyond the programme (Francisco Giacometto).
- Moving optimisation, machine learning and big data analytics from elective to core content, and the Business Innovation and Entrepreneurship track's two AI profiles, AI as co-founder and AI as change agent, were assessed as the strongest concepts in the curriculum blueprint, reflecting the key challenges organisations face in adopting AI (Piotr Grudzien).
- The equity design, targeting 30% of learners female or from lower socio-economic backgrounds, was assessed as well grounded in sector evidence and as reachable rather than aspirational, given the programme's English-language delivery, FSTP funding and flexible online offer (Francisco Giacometto).
- Hussain Kazmi highlighted the programme's distinctive proposition of combining energy systems and artificial intelligence within a single Master's degree. This integrated approach was presented as an important source of added value, enabling participants to develop competencies across two fields that are often addressed through separate programmes (live discussion).

4.2 Keeping the curriculum current with the pace of AI change

- Opening the open discussion, Frank Gielen raised how to equip participants to deal with the pace of change in AI technology, given that today's curriculum design could be overtaken within a few years (live discussion).
- Mihir Sarkar and Ronda Zelezny-Green both raised content refresh cadence and consistency across the four universities, and argued for grounding participants in methodology, mindset and critical thinking rather than specific tools, applied to real, unresolved industry problems (live discussion).

- Hussain Kazmi responded that the curriculum has already evolved once, from a focus on large language models to today's agentic systems, and that the project will rely on industrial partners' domain expertise to stay current, since practice often runs ahead of academic research (live discussion).
- Francisco Giacometto's written submission converts this discussion into a concrete proposal: a standing seasonal review cycle built into curriculum governance itself, for example once per semester, in which alumni outcomes, industrial partner feedback and emerging technology signals are used to retire, refresh or add electives and specialisation content, rather than waiting for the next full deliverable cycle.

4.3 From analysing to building and deploying: practical AI and systems-integration skills

- Francisco Giacometto and Piotr Grudzien, independently, flagged the learning outcome on maintaining AI and computer literacy and awareness of new tools as passively framed. Piotr Grudzien: participants “should build the future, not catch up with it.” Francisco Giacometto proposed tightening the outcome's verb from awareness and upkeep toward building.
- Both submissions identified the same central gap in near-identical terms: participants can model and script, but the curriculum does not extend to how AI software is actually delivered in an operational setting, including versioning, testing, monitoring a deployed model, and integrating with legacy or fragmented systems and operational technology such as SCADA. Piotr Grudzien described this as the hardest problem reported by practitioners; only one specialised module, at Grenoble INP-UGA, mentions SCADA, and only in passing.
- Francisco Giacometto proposed a dedicated forward-deployed-engineer strand, built around live client discovery and engineering a solution that works within a client's existing constraints rather than a clean-slate build, potentially delivered as a variant of the Business Innovation and Entrepreneurship Applied Project's Transformational Challenge pathway.
- Piotr Grudzien proposed increasing participants' exposure to AI-native start-ups through industry challenges as a natural vehicle for building and shipping skills, including prototyping to validate hypotheses and building applications that integrate large language models with proprietary machine learning algorithms.

4.4 Responsible AI, governance and regulatory alignment

This was the most strongly convergent theme across all three written submissions, each reached independently through a different lens: curriculum content, industry practice, and governance and compliance specifically.

- Piotr Grudzien: the Responsible Use of AI content is scoped to generative-AI hygiene, while the energy sector needs human-in-the-loop design, audit trails, explainability and clarity on liability when AI touches energised assets. The EU AI Act, which classifies critical-infrastructure AI as high-risk, appears only once across the three deliverables reviewed, and the NIS2 Directive, the Data Act and the common European energy data space are not considered at all.
- Francisco Giacometto reached the same conclusion independently and in more detail: across D2.1, D2.2 and D6.1 combined, roughly 250 pages, the EU AI Act is named exactly once, as a passing reference in one ESADE capstone; NIS2, the Data Act and the common European energy data space do not appear. He assessed that for a programme whose graduates will put AI in front of energised assets and critical infrastructure, audit trails, human-in-the-loop design and accountability for AI-assisted decisions deserve to be explicit learning outcomes rather than an implicit backdrop to one elective capstone, and noted the gap is cross-cutting rather than confined to the single 1 ECTS Responsible Use of AI module.
- Alicja Stankiewicz, writing independently of the meeting discussion and the other two submissions, proposed that the programme has an opportunity to position itself as a European reference programme for trustworthy AI in critical energy infrastructure, with participants developing expertise in governance, security, resilience, explainability, accountability and compliance alongside technical AI competencies. She proposed strengthening AI governance as a practical implementation topic, with particular attention to the implementation of the ISO/IEC 42001 standard within energy sector organisations, noting that management and innovation perspectives are currently well represented but translation of governance frameworks into technical and operational practice is not.

Taken together, three independent Advisory Board members identified the same structural gap: responsible AI content that covers generative-AI hygiene well, but does not yet equip participants for AI governance, regulatory compliance and accountable deployment in critical energy infrastructure.

4.5 Cybersecurity and grid resilience as a transversal competency

- Alicja Stankiewicz proposed embedding cybersecurity across all programme pathways and specialisations rather than addressing it only in selected courses, covering secure AI deployment, cyber risk management, operational technology security, resilience and secure-by-design principles.
- Francisco Giacometto's independent review of D2.2 found grid cybersecurity present only as a single, conditionally elective course at one of the four partner universities, KTH, with no equivalent at KU Leuven, UPC or Grenoble INP-UGA, and no mandatory treatment anywhere in the programme, even though the programme trains participants to build the AI-driven forecasting and control layers that sit on top of grid infrastructure.

- The same submission found geopolitics treated only as a six-hour ESADE business-track session framed as market context for venture building rather than as an engineering or operational-resilience problem, with no learning outcome on security of supply, interconnector risk, state-sponsored intrusion into grid operational technology systems, or supply-chain dependency for critical AI and hardware components, despite D2.1 citing the Iberian Peninsula blackout and Dutch grid congestion as live pressures on European grids.
- Francisco Giacometto further noted that agentic AI is currently framed in the curriculum as a single analytical assistant producing outputs for a human to check, not as a supervisory system, and proposed extending this content to the design and safe constraint of orchestrated multi-agent systems for grid operations, including coordination logic, human override and resilience of the orchestration layer itself, which he assessed as the direction agentic deployments in critical infrastructure are heading, and which raises its own attack surface.
- Proposal (Francisco Giacometto): add grid security and resilience as an explicit thread running through the Year 2 grid-side specialisation tracks, mirroring how data and AI content is already threaded through Year 1, rather than leaving it to one optional course at one university.
- This theme should be read alongside Johan Driesen's related but distinct point raised live at the meeting: the practical energy-system constraints on AI's own growth, including grid capacity, data centre siting and cooling, and moratoria on new data centres in some countries. Where Alicja Stankiewicz and Francisco Giacometto raise the security and resilience of AI systems running on the grid, Johan Driesen raises the energy demand AI itself places on the grid; both point toward strengthening the systemic and responsible-use content of the curriculum, from different directions.

4.6 Evaluation, assurance and AI procurement and vendor judgement

- Piotr Grudzien, Francisco Giacometto and Alicja Stankiewicz independently raised a closely related gap: most energy companies will adopt AI through third-party or vendor solutions rather than building their own systems, and the curriculum does not currently address how to evaluate whether a purchased or deployed AI system actually works and keeps working, including drift, degradation and vendor claims, or how to assess and challenge a vendor's system.
- Alicja Stankiewicz additionally proposed a stronger emphasis on organisational readiness, change management and human adoption of AI-enabled solutions, to help graduates lead successful transformation initiatives in both industry and the public sector.

4.7 Year 2 specialisation coverage: trading, storage and asset management

- Francisco Giacometto and Piotr Grudzien independently identified the same gap: all four Year 2 specialisation tracks are grid-side (smart transmission systems at KU Leuven, smart distribution grids at UPC, smart cities at KTH, distributed energy resources at Grenoble INP-UGA), while D2.1's own demand evidence points to trading, storage optimisation and asset management or operation and maintenance as areas of real, current industry demand with no specialisation to land in.
- Both submissions independently proposed an AI for Renewable Asset Management specialisation or online-module track, covering feasibility, trading, operation and maintenance, and storage, and both named consortium partner TokWise as a natural co-design partner given its work in market optimisation.
- Piotr Grudzien additionally questioned why the core AI and digital anchor course covers only 50 to 60% of Year 1 ECTS at three of the four partner universities (see Section 4.14).

4.8 Business Innovation and Entrepreneurship Applied Project: from roadmap to tested artefact

- Piotr Grudzien and Francisco Giacometto independently raised the same concern about the Transformational Challenge pathway of the Business Innovation and Entrepreneurship Applied Project: its stated outcome is a transformation roadmap with recommendations and implementation guidelines, rather than a built and tested artefact.
- Piotr Grudzien drew on direct experience hosting SELECT Project of the Year teams twice, in both cases producing a working prototype tested with the host company's own customers, which he described as well received and praised by participants for its practicality; he assessed that companies rarely act on recommendations alone.
- Francisco Giacometto reached the same conclusion independently, drawing on the same SELECT Project of the Year model, and proposed requiring at least a subset of Transformational Challenge teams, not only New Venture Creation teams, to deliver a working proof of concept or early prototype alongside the roadmap, with a named company sponsor accountable for the engagement.
- Piotr Grudzien also asked for clarity on how many ECTS the Business Innovation and Entrepreneurship Applied Project carries, noting that this was not clear from the materials reviewed.

4.9 Industry pipeline beyond graduation

- Piotr Grudzien and Francisco Giacometto independently proposed a closely similar structured post-graduation rotation programme with InnoEnergy industrial partners, both naming Siemens, Schneider Electric and ABB as example host companies, to extend industry contact beyond graduation, give graduates practical placement experience, and give Advisory Board member companies a direct pipeline into AESAI talent. Piotr Grudzien suggested branding this “AI Leadership in the Energy Industry”.

- This complements the live discussion in which Hussain Kazmi noted the Advisory Board and wider consortium are currently weighted toward energy companies rather than AI-native or big-technology companies, and asked members to help broker introductions to AI-native or big-technology companies investing in energy (see Section 4.13).

4.10 Online modules for professional learners: completion and cohort design

- Piotr Grudzien and Francisco Giacometto independently raised the same risk: the Grant Agreement's 80% completion rate target applies equally to the two-year, in-person Master's programme and to asynchronous, quiz-based online modules aimed at 300 working professionals, and without a cohort structure this KPI is ambitious for asynchronous professional learning.
- Both proposed the same response: run the online modules in cohorts, with a named employer sponsor per learner to improve accountability, and close every module with one artefact the learner deploys in their own work environment, rather than a quiz alone. Piotr Grudzien suggested linking this to InnoEnergy's existing Road to C-Suite programme, which already includes a workplace-implemented project.
- This is consistent with Piotr Grudzien's clarifying question at the meeting on whether online modules are compulsory or elective for Master's participants, which Hussain Kazmi answered live: online modules are independent of Master's requirements, and the 300-plus learner target is not tied to Master's enrolment.

4.11 Equity, accessibility and inclusion

- Alicja Stankiewicz proposed that the programme place greater emphasis on ensuring equitable access to AI capabilities for smaller and less affluent cities and regions, so that the energy transition does not inadvertently widen the digital divide between highly digitalised metropolitan areas and municipalities with limited resources, and that graduates be equipped to design scalable, affordable and inclusive AI solutions.
- Within the Smart Cities specialisation specifically, she proposed more attention to municipalities aspiring to become smart cities, which face budget constraints, skills shortages and legacy infrastructure, rather than focusing primarily on mature smart-city ecosystems, and proposed extending industry engagement to include local governments and municipalities pursuing smart-city initiatives alongside industrial partners.
- She also proposed a stronger curriculum emphasis on data ownership, data quality management, data-sharing frameworks and interoperability across organisations, energy systems and smart-city environments, since successful AI deployment depends on data governance as much as on algorithms.
- This complements Francisco Giacometto's assessment (Section 4.1) that the programme's learner-facing equity target is well designed; Alicja Stankiewicz's points extend the same principle to the beneficiaries and municipalities the programme's graduates will ultimately serve.

4.12 Capital access for new ventures

- Francisco Giacometto assessed that capital-raising content in the Business Innovation and Entrepreneurship track currently stays at the level of a single introductory session and generic investor panels, and that within the Green Seed Journey competition, the programme's flagship entrepreneurship pathway, access to real capital such as grants or introductions to business angels and corporate venture arms is reserved for a competitive post-competition selection rather than built into the track most degree participants actually go through.
- He proposed giving every New Venture Creation team, not only Green Seed Journey finalists, a maintained point of contact into real capital, through an InnoEnergy-held and regularly refreshed directory of active energy-focused business angels, corporate venture arms and the AI4GreenDeal industry partners' own investment and innovation teams, with a guaranteed minimum number of warm introductions per completed venture, tracked with a simple indicator such as introductions made or follow-on capital raised within 12 months. He noted deliberately that he has not compiled individual contact details himself, since a real investor directory needs to be built and kept current by the project team and InnoEnergy directly, with each contact's consent to be introduced.

4.13 Broadening the industry and AI ecosystem around the Advisory Board

- In live discussion, Hussain Kazmi observed that the Advisory Board and the wider consortium are currently weighted toward energy companies rather than AI-native or big-technology companies, noted that few European AI-first companies are active in this space, and asked Board members to help broker introductions to AI-native or big-technology companies investing in energy.
- Piotr Grudzien and Mihir Sarkar discussed how to help participants stay close to the AI frontier even without direct access to major AI laboratories, and the value of a multidisciplinary, ecosystem perspective spanning startups, big technology companies and non-technical disciplines, given the scale of disruption AI may bring to energy sector business models (live discussion).
- Eylem Tasdemir invited Advisory Board members, at the meeting, to propose projects, hackathons, guest lectures or site visits directly to the project team at any time; this invitation stands as an open channel for members to act on the ecosystem-broadening points raised here and in Section 4.9.
- Sarkar Mikir noted the potential contribution of start-ups working at the intersection of AI and energy. Such organisations could expose learners to emerging applications, rapidly evolving technologies and new approaches to improving the energy ecosystem, complementing collaboration with established energy and technology companies.

4.14 Open items for Work Package 2 clarification

- Piotr Grudzien asked why the core AI and digital anchor course, together with the rest of the Year 1 core curriculum, covers only 50 to 60% of Year 1 ECTS at three of the four partner universities, and assessed that the answer materially affects how specialist or generalist the first year actually is in practice.
- Francisco Giacometto raised a related, unresolved question: a precise, comparable breakdown of the Year 1 core-versus-elective ECTS split at each of the four universities, noting that the tables in D2.2 Section 5 do not make this fully comparable at a glance.
- Both points are recorded here as open items for Work Package 2 to clarify with the Advisory Board, rather than as settled gaps, since they concern factual clarification of the existing curriculum design rather than a proposed change to it.

5. Consolidated Recommendations

The table below consolidates the feedback in Section 4 into discrete recommendations for consortium consideration. It does not represent decisions taken; each recommendation requires assessment by the relevant work package leader against accreditation, resourcing and timeline constraints before it can be adopted.

#	RECOMMENDATION	RAISED BY	RELEVANT WORK PACKAGE
1	Broaden responsible-AI content beyond generative-AI hygiene to cover human-in-the-loop design, audit trails, explainability and accountability for AI-assisted decisions on energised assets, with explicit reference to the EU AI Act, the NIS2 Directive, the Data Act and the common European energy data space	Piotr Grudzien, Francisco Giacometto, Alicja Stankiewicz	WP2, WP6
2	Assess embedding AI governance as a practical implementation topic, including the ISO/IEC 42001 standard, positioning the programme toward trustworthy AI for critical energy infrastructure	Alicja Stankiewicz	WP2
3	Assess embedding cybersecurity, including grid operational technology security and secure-by-design practice, as a transversal thread across all specialisation tracks rather than a single elective course	Alicja Stankiewicz, Francisco Giacometto	WP2
4	Extend agentic AI content from single-agent analytical use to the design and safe constraint of orchestrated multi-agent systems for grid operations	Francisco Giacometto	WP2
5	Strengthen learning outcomes on operational AI delivery: versioning, testing, monitoring deployed models and integration with legacy and operational technology systems	Piotr Grudzien, Francisco Giacometto	WP2
6	Consider a dedicated forward-deployed-engineer or client-facing solutions strand, built around live client discovery within an organisation's existing systems and constraints	Francisco Giacometto	WP2, WP6
7	Add learning outcomes on evaluating and assuring third-party AI systems, and on AI procurement and vendor judgement	Piotr Grudzien, Francisco Giacometto, Alicja Stankiewicz	WP2
8	Assess an AI for Renewable Asset Management specialisation or online-module track covering feasibility, trading, operation and maintenance, and storage, with TokWise as a potential co-design partner	Piotr Grudzien, Francisco Giacometto	WP2, WP3
9	Require at least a subset of Transformational Challenge teams to deliver a working proof of concept or early prototype alongside the roadmap, with a named company sponsor	Piotr Grudzien, Francisco Giacometto	WP6
10	Assess a structured post-graduation rotation programme with industrial partners such as Siemens, Schneider Electric and ABB	Piotr Grudzien, Francisco Giacometto	WP6, WP5
11	Run professional-learner online modules in employer-sponsored cohorts, closing each module with a workplace-deployed artefact rather than a quiz alone	Piotr Grudzien, Francisco Giacometto	WP3
12	Establish a recurring, lighter-touch curriculum review cycle (for example once per semester) drawing on alumni outcomes, industrial partner feedback and emerging technology signals	Francisco Giacometto; supported by live discussion	WP2
13	Broaden industry engagement in Year 2 specialisations and the Smart Cities track to include municipalities earlier in their smart-city journey, alongside mature ecosystems and industrial partners	Alicja Stankiewicz	WP2, WP6

#	RECOMMENDATION	RAISED BY	RELEVANT WORK PACKAGE
14	Strengthen curriculum content on data governance, data quality and interoperability across organisations and energy systems	Alicja Stankiewicz	WP2
15	Give every New Venture Creation team a maintained point of contact into real investment capital, not only Green Seed Journey finalists	Francisco Giacometto	WP6
16	Help broker introductions between the consortium and AI-native or big-technology companies investing in energy	Hussain Kazmi; supported by Piotr Grudzien and Mihir Sarkar	WP1, Advisory Board
17	Clarify the Year 1 core-versus-elective ECTS split at each partner university in a comparable format	Piotr Grudzien, Francisco Giacometto	WP2
18	Strengthen learning outcomes on problem framing, cross-domain thinking and the selection of proportionate AI or digital solutions, ensuring that participants can determine when and how AI adds value rather than applying technology for its own sake.	Frank Gielen, Mihir Sarkar, Francisco Giacometto	WP2, WP6
19	Expand collaboration with AI-and-energy start-ups & tech companies through practical challenges and guest contributions	Francisco Giacometto, Mihir Sarkar	WP2, WP5, WP6, Advisory Board

6. Proposed Next Steps for Consortium Consideration

- WP2 (KU Leuven) and WP6 (ESADE) to review Section 4 and the consolidated recommendations against the current state of D2.2 and D6.1, and assess which can be incorporated before the programme structure and curriculum are finalised for accreditation and the 2027 intake.
- WP3 (UPC and NIIT) to review the cohort and completion-KPI recommendation (Section 4.10) for the online stackable modules.
- Project Coordination to confirm the two open Year 1 ECTS clarification items (Section 4.14) with WP2 and report back to the Advisory Board.
- Project Coordination to maintain the ecosystem-broadening channel raised by Hussain Kazmi (Section 4.13) and Eylem Tasdemir's open invitation to Advisory Board members for projects, hackathons, guest lectures and site visits.
- The Board's feedback on long-term sustainability and broader industry involvement, only partly covered in this first round, to be developed further ahead of the mid-term quality assessment round.

7. Submission and Review Timeline

MILESTONE	DATE
Draft report circulated to the Advisory Board for review	05.10.2026
Advisory Board comments due	09.10.2026
Final report submitted to HaDEA with the project progress report	30.10.2026
Round 2 quality assessment (mid-term)	TBC, around project mid-term
Round 3 quality assessment (end of project)	TBC, toward project end (the project runs to 30 June 2029)

Annex 2 – Industrial Partner Feedback Report

1. Introduction and Purpose

This report compiles written feedback gathered from AI4GreenDeal's industrial partners on the Advanced Energy Systems and AI Master's programme curriculum, the Business Innovation and Entrepreneurship (BIE) journey, and the online stackable modules. The feedback was submitted in response to an invitation circulated by the Project Coordinator, which set out seven guiding questions and asked partners to review three project deliverables beforehand: D2.1 Skills Gap Analysis and Product Strategy, D2.2 Programme Structure and Detailed Curriculum per University, and D6.1 Programme Innovation and Entrepreneurship Strategy Guidelines.

This report draws on a single evidence stream: the written submissions from the five industrial partners, compiled into one document by the Project Coordination. No meeting or call records were included in the material reviewed for this report. Written feedback was received from five industrial partners: Kimitisik, Astrokyon, TokWise, Watt-IS and Ento.

Each partner was asked to answer the same seven guiding questions: whether the learning outcomes are aligned with the sector's skill gaps and practical rather than theoretical; which skills or competencies may be missing; recommendations for industry connections or activities; whether the content focuses on current and emerging needs rather than a generalist approach; how to help participants apply what they learn in their professional roles; whether they see large-scale job displacement or AI delegation and fatigue in their organisation; and any additional remarks.

Partners were invited to review D2.1, D2.2 and D6.1 ahead of responding.

2. Synthesis of Industrial Partner Feedback

2.1 Strengths validated by industrial partners

- Kimitisik assessed that, alongside AI and energy domain knowledge, the programme's innovation focus and entrepreneurial mindset are key for value creation, and that the programme targets this well through direct focus and through challenges and use cases where participants put it into practice.
- Astrokyon assessed that forecasting, optimisation, power systems and energy markets are well covered across the four universities, and that the programme learning outcomes explicitly include machine learning on operational, market and environmental energy data.
- TokWise assessed that the identified skill gaps match what it sees as an AI-driven energy trading company, and singled out KU Leuven's module on value-oriented forecasting and decision-focused learning as a strong example, noting that “a forecast is worth what the downstream decision gains from it”, so accuracy alone is not enough.
- Watt-IS assessed that the four skill gaps in D2.1 match what it sees when hiring, that the D2.2 learning outcomes address them, and that the design pillars of embedded digital tools and applied, practice-oriented learning are the right ones.
- Ento assessed that the programme does what D2.1 set out to do: every partner university adds a mandatory digital course in Year 1, the joint course Energy and AI: Advanced gives the cohort a shared core, and each new course maps to a skill gap. It singled out KU Leuven's module on causal machine learning, physics-informed networks and flexibility verification, the AI pedagogical guideline in D6.1 Annex 1, and ESADE's AI for Innovation and Entrepreneurship module.

2.2 Taking AI models into production: the most convergent gap

This was the most strongly convergent gap across the submissions, raised independently and in closely similar terms by three of the five partners.

- Astrokyon: taking models to production, including deployment, monitoring, drift and retraining, is largely absent from the curriculum; “an energy model that is not monitored in operation quickly loses value.”
- TokWise: taking models to production, including data pipelines, monitoring, model drift and knowing when to retrain or override, is “where many projects fail.”
- Watt-IS: proposed an explicit learning outcome on deploying and maintaining a model, not only training it, alongside a broader concern that the current outcomes are framed around methods (machine learning, optimisation, Python) more than the full workflow graduates face in industry, and separately proposed MLOps content covering versioning, monitoring, data drift and cloud deployment.

2.3 Working with messy, real-world operational data

- Astrokyon: most effort in practice goes into getting time-series data out of building management systems, inverter cloud APIs, meters and SCADA, cleaning it and keeping pipelines running; data quality, time-series pipelines and SQL are thin in the current course content.
- Watt-IS: around 80% of the work is getting messy real-world data into a usable state (missing readings, wrong timestamps, meter changes, unknown customer context, and public APIs that change or become

unavailable), and proposed explicit learning outcomes on data quality and preparation of real energy time series, and on validating results and quantifying uncertainty.

- Ento: most operational energy data, especially in buildings, is not big but incomplete and irregular, with gaps, meter changes, regime shifts, and access through data hubs and APIs; this deserves more curriculum attention than data volume does.
- Astrokyon additionally recommended that at least one mandatory project per participant use real-shaped operational data with its gaps and errors, rather than clean, pre-packaged datasets, since the risk to graduates' readiness sits less in the course list than in the projects.

2.4 Directing and verifying AI agents and outputs

- Astrokyon: working with AI coding agents and verifying their output is now the main change in how its engineers work; it would like participants to practise directing AI agents on real engineering material and checking the results, catching invented facts, wrong figures and unsafe designs, alongside basic software engineering practice (version control, code review, documentation). It noted that D6.1 Annex 1 already has good verification exercises for the business side and would value a technical counterpart.
- Ento: proposed agentic AI engineering as a missing skill, teaching participants to build agents that call validated, deterministic tools instead of improvising, to evaluate their output, and to keep the work auditable and replicable. In its own words: “Critical infrastructure needs trust, not improvisation.” It also proposed that the master-level learning outcome on programming should be the ability to specify, review, test and maintain code written with AI assistance, since programming itself is already an admission requirement.
- Watt-IS raised a related concern about over-trust in AI-generated code and analyses as the main risk it manages, rather than fatigue, addressed through peer review and keeping a human accountable for every result; it said this is why it strongly supports the emphasis on critical thinking and “analysis of AI outcomes” already in D2.1.
- TokWise raised a closely related point under explainability (Section 4.9 below): the ability to assess AI output and explain why a model did what it did.

2.5 Agentic AI and large language models in the core curriculum

- Astrokyon: D2.1 itself recommends moving machine learning, optimisation and agentic AI into the core; in D2.2, agentic AI appears mainly in the no-code online Module 1, and reinforcement learning is named in the learning outcomes but not in any course title. It encouraged closing that gap.
- Watt-IS: agentic AI and large language models are mentioned in D2.1 as a strong industry trend but are less visible in the D2.2 learning outcomes; it proposed a practical unit on using large language model-based tools and agents for energy analysis, including how to verify their output.
- Ento: D2.1 recommends making agentic AI a core topic, but in D2.2 it only appears in ESADE's no-code module.

2.6 Data regulation, security and governance

- Astrokyon: proposed strengthening data regulation and security in practice, covering GDPR and data sharing for building and household energy data, the EU AI Act beyond the introductory module, and cybersecurity of operational energy systems.
- Watt-IS: proposed energy data governance content covering GDPR and the privacy of household consumption data, the EU Data Act, energy data spaces, and anonymisation and synthetic data, noting these appear to be missing from D2.2.

2.7 The demand side: buildings and behind-the-meter

- Watt-IS: proposed smart-meter and behind-the-meter analytics content, including load disaggregation, customer segmentation, consumption benchmarking and flexibility estimation from 15-minute data, noting the curriculum is strong on transmission, markets and grids but thinner on the demand side, “where much of the data and many of the jobs are.”
- Ento: noted that buildings account for around 40% of EU energy consumption and are the focus of the EPBD and EED, yet the four Year 2 specialisations cover transmission, distribution and distributed energy resources; building energy management, heat pumps, district heating and EPC-driven renovation planning are almost absent. It suggested the KTH smart cities track as a natural home for this content.

2.8 Market operations analytics

- Astrokyon: proposed hands-on work with day-ahead and intraday price data, TSO and ENTSO-E transparency data, and flexibility and aggregation, citing the move to quarter-hourly day-ahead products noted in D2.1 as an example of current relevance.
- TokWise: proposed energy market knowledge covering market design (day-ahead, intraday, balancing) and how algorithmic decisions interact with market rules.

2.9 Explainability and communicating AI results to non-experts

- TokWise: proposed explainability as a missing skill, meaning the ability to assess AI output and explain why a model did what it did, describing this as an “open the box” capability that builds trust with clients and operators.
- Watt-IS: proposed explainability and communication of AI results to non-experts such as households, utility managers and regulators, noting that trust is often the barrier to adoption, more than accuracy.

2.10 Assessment and learning outcomes: building and shipping, not only explaining

- Ento: observed that the technical online modules (3, 4, 5 and 7) have learning outcomes built on verbs such as explain, describe, identify and formulate; only Module 6 and ESADE's Module 1 ask learners to build or ship something. It proposed that each technical module end with a hands-on task on real data.
- Ento also observed that the stronger learning outcomes in D2.2 Appendix D (covering reliability, uncertainty, interpretability, hybrid AI-physics models and data quality) are not reflected in the main Data and AI outcomes in Tables 1 and 2, and suggested bringing them into the main tables.

2.11 Applying learning directly in professional roles: an own-organisation capstone

Four of the five partners independently proposed a closely similar mechanism for helping professional learners apply what they learn.

- Astrokyon: for the stackable modules aimed at professionals, proposed short applied exercises that participants can run on their own company's data, with a template for presenting the result internally.
- TokWise: proposed a small applied project in the participant's own organisation to help transfer learning directly into daily work.
- Watt-IS: proposed letting professional learners bring their own organisation's problem or data as the assignment for a module, with a scoping template, and suggested each online module close with a ready-to-reuse deliverable such as a notebook, a dashboard, or a one-page business case.
- Ento: proposed that each module end with a capstone on the learner's own organisation's data or problem, noting this pairs well with Module 2, which already teaches what data is safe to share with AI tools, and that ESADE's Module 1 already closes with shipping one working, governed AI workflow, a pattern it suggested extending to the technical modules.

2.12 Keeping the online modules current

- TokWise: given the pace of AI development, recommended that the online modules have a fast update cycle.

2.13 Recognition and credentialing

- Watt-IS: asked whether it would make sense to offer micro-credentials that employers can recognise, mapped to job roles such as energy data analyst or flexibility analyst, rather than only to ECTS.

2.14 Opening industrial challenges to participants' own ideas

- Kimitisik: recommended exploring the option of letting participants use their own innovations or startup ideas as an industrial challenge for their learning activities, rather than only allowing large industrial partners to supply the challenge. It noted that some other Master's programmes it has experience with do not offer this option, and that while it creates challenges for programme design, it may bring more passion from some learners into their learning journey.

2.15 Job displacement, AI delegation and fatigue

All five partners answered this question, and a consistent pattern emerges across their responses: none reported large-scale job displacement from AI, but several described a reshaping of roles, with routine and junior-level execution work increasingly delegated to AI and more value placed on judgement, verification and accountability.

- Kimitisik: the roles that have been replaced with AI in its organisation are not strictly related to the energy field; it sees AI as an enabler and has not experienced disruption so far.
- Astrokyon: AI agents already absorb a growing share of junior and intermediate implementation work, but senior effort does not shrink, since judgement, domain knowledge and accountability for correctness remain with people. It looks for engineers who can direct and verify AI work rather than pure coders, and manages delegation risk through explicit verification steps and well-documented project context.
- TokWise: as a 25-person organisation, it has not seen large-scale displacement; it banks in the productivity gain and is working to ensure AI is leveraged correctly across the organisation, not only at the individual level.
- Watt-IS: does not expect large-scale displacement but does see the profile changing, with routine coding, report drafting and first-pass data exploration increasingly delegated to AI; the risk it notices is over-trust in AI-generated work rather than fatigue, addressed through peer review and human accountability for every result.
- Ento: AI now changes how it thinks about team size; without large language models and coding agents, its current work would need a considerably larger team, and some of its largest projects might not have been feasible. It continues to hire, including junior profiles, for automation and AI-enabled process ownership, but observed that graduates traditionally built judgement on entry-level tasks that AI agents now perform, and

proposed that the programme give participants deliberate repetition: core analyses done by hand first, then with AI, comparing the two, a pattern it noted is already used in D6.1 Annex 1's "Me vs AI" format.

2.16 Business Innovation and Entrepreneurship journey (D6.1): Ento's observations

Ento submitted four specific observations on the BIE journey, in addition to its answers to the seven guiding questions. No other partner commented on D6.1 in similar detail, so these points are attributed to Ento alone.

- Assessment: half of the BIE grade currently comes from closed-book, multiple-choice quizzes on paper, which Ento assessed as at odds with an AI-native, applied track; it proposed applied assignments and oral defences to test the competences the track is designed for.
- Timing: per D2.2 Table 7, all BIE sessions run between November and July of Year 1, so the Applied Project ends before participants specialise or start their thesis. Ento proposed linking the Transformational Challenge to a Year 2 industry project or thesis to give it real technical depth.
- Framing: Ento assessed that the "AI as co-founder" framing, where AI co-generates the concept, business model and go-to-market from day one, invites participants to outsource the thinking the track is meant to develop. It proposed "AI as sparring partner" instead, with opportunities grounded in real customer interviews, which it assessed as a better fit with the track's own principle of human accountability.
- Energy-specific business content: Ento assessed that the BIE sessions cover the general startup toolkit well but miss the commercial realities of software ventures in energy specifically, including public procurement, long sales cycles, regulation-driven demand, and performance-based contracts backed by verified savings. It noted the deep-tech model (capital-intensive, long research and development cycles) fits hardware ventures better than data and software ventures.

3. Concrete Industry Contributions Offered

Several partners offered specific, actionable contributions alongside their feedback.

PARTNER	OFFER
Kimitisik	No specific contribution offered. Recommended that participants' own innovations or startup ideas be eligible as industrial challenges, not only those proposed by large industrial partners.
Astrokyon	Challenge briefs with synthetic datasets, guest lectures, workshops, thesis topics (reinforcement learning or model predictive control for HVAC control, PV forecasting, hybrid physics and machine learning portfolio forecasting) and mentoring, to be set out in a revised scope proposal. Maintains three standing case proposals from its 28 April WP3 presentation: an AI decision layer for energy management in large industrial and commercial building complexes (based on a case study of a historic coal power plant being converted into a hotel and cultural complex); multi-vendor PV monitoring and production forecasting; and AI for energy trading and cluster aggregation on the Polish market.
TokWise	Problem statements from trading and battery energy storage system optimisation, guest lectures, and thesis or hackathon topics.
Watt-IS	A shared bank of anonymised real datasets with documented use cases, including anonymised 15-minute residential smart-meter data (subject to the data owner's authorisation), covering disaggregation, forecasting, demand response and energy communities; industry-set challenges and hackathons; a recorded guest lecture on smart-meter analytics and non-intrusive load monitoring; thesis topics proposed a full semester ahead with an industry co-supervisor and data access; and participation as jury members for the BIE Applied Project.
Ento	A campus buildings challenge: each partner university connects its own campus meter data to Ento, and participants use Ento's tooling with an AI assistant to find energy waste and verify savings with a standardised measurement and verification engine. Piloted live at a KTH lecture in September 2026: 13 campus buildings analysed, one efficiency project detected, and 900 MWh of savings verified during the class. Also offered a session on AI agents in energy management within Energy and AI: Advanced, a case for one online module (for example on measurement and verification), and thesis co-supervision (not yet confirmed).

4. Consolidated Recommendations

The table below consolidates the feedback in Section 4 into discrete recommendations for consortium consideration. It does not represent decisions taken; each recommendation requires assessment by the relevant work package leader against accreditation, resourcing and timeline constraints before it can be adopted.

#	RECOMMENDATION	RAISED BY
1	Add explicit learning outcomes and practical content on deploying and maintaining AI models in operation: monitoring, drift detection, retraining and versioning	Astrokyon, TokWise, Watt-IS
2	Strengthen content on working with messy, real-world operational data: data quality, time-series preparation, SQL and pipelines from building management systems, SCADA, meters and APIs	Astrokyon, Watt-IS, Ento
3	Require at least one mandatory project per participant to use real-shaped operational data with its gaps and errors, rather than clean, pre-packaged datasets	Astrokyon

#	RECOMMENDATION	RAISED BY
4	Add explicit content on directing and verifying AI coding agents and outputs, including auditable and replicable work, alongside basic software engineering practice (version control, code review, documentation)	Astrokyon, Ento
5	Bring agentic AI and large language model content into the core curriculum and learning outcomes, not only the ESADE no-code module, as D2.1 itself recommends	Astrokyon, Watt-IS, Ento
6	Add or strengthen learning outcomes on data regulation and security in practice: GDPR, the EU Data Act, energy data spaces, the EU AI Act beyond the introductory module, and operational technology cybersecurity	Astrokyon, Watt-IS
7	Strengthen demand-side and behind-the-meter content (smart-meter and building energy analytics, load disaggregation, heat pumps, district heating, EPC-driven renovation) to balance the current transmission, distribution and DER focus of the Year 2 specialisations	Watt-IS, Ento
8	Add content on market operations analytics and market design (day-ahead, intraday, balancing, TSO and ENTSO-E transparency data)	Astrokyon, TokWise
9	Add explicit learning outcomes on explainability and communicating AI results to non-expert audiences	TokWise, Watt-IS
10	Redesign technical online module learning outcomes and assessment to require learners to build or ship something on real data, rather than only explain, describe or identify concepts	Ento
11	Give professional learners an applied capstone using their own organisation's data or problem in each online module, closing with a reusable deliverable	Astrokyon, TokWise, Watt-IS, Ento
12	Establish a fast update cycle for the online modules given the pace of AI development	TokWise
13	Consider micro-credentials mapped to job roles, in addition to ECTS, for the online modules	Watt-IS
14	Review the BIE Applied Project's assessment, timing and framing, and add energy-specific business content	Ento
15	Allow participants' own innovations or startup ideas to be used as industrial challenges, not only those proposed by large industrial partners	Kimitisik
16	Take up the concrete industry contributions offered in Section 5: datasets, guest lectures, hackathons, thesis topics, the Ento campus buildings challenge, and BIE jury participation	Kimitisik, Astrokyon, TokWise, Watt-IS, Ento

Annex 3 – Consolidated Year 1 Risk Register

Risk No	Description	WP	L (1-3)	S (1-3)	R = L * S	Proposed Mitigation Measures	Owner	Status
1	Budget overruns (impact medium, likelihood low)	WP1	1	2	2	To mitigate this risk, the project proposal contains a detailed and realistic budget, with a contingency fund for unexpected expenses. Regular monitoring of expenses and budget will help to identify potential overruns early on and allow the consortium board to take corrective action. Furthermore, we will place a high degree of responsibility on each individual participant to monitor their own cost and progress and efficient deployment of resources, so that the overall project will never be in jeopardy.	Coordinator	**1 mention** at Proposal stage **Status:** Ongoing with regular monitoring through InnoInsight platform
2	Funding Delays (impact high, likelihood low)	WP1	1	3	3	Delays in receiving funding can disrupt the project schedule and cash flow. To mitigate this risk, we will monitor the progress and achievement of KPIs and maintain good communication with the funding body to receive the scheduled grant payment tranches in a timely manner, but request internally a financial buffer to bridge funding delays and focus on achieving the project outcomes.	Coordinator	**1 mention** at Proposal stage **Status:** Ongoing, PM carried out on a daily basis with a particular focus on the annual report at the end of the year

3	Programme accreditation may not be possible in a timely manner at all universities (impact medium, likelihood low) External dependencies that could delay work: Accreditation and programme approval procedures depend on internal university processes and, where relevant, national/institutional regulations. These were not yet causing delay in M4–M6, but they may affect later WP2 work, especially D2.3. Delays in accreditation planning and institutional approval processes across partner universities. As the curriculum structure becomes more concrete, the main risk shifts from curriculum alignment toward ensuring that each university can follow the required internal approval/accreditation timeline.	WP2	2	2	**4**	To ensure the project does not run into any accreditation related issues for the specialisation and modules at universities, we have already initiated conversations at each of the partnering universities. Given the complex and heterogenous decision-making structure in different partner universities and EU member states, these conversations will be pursued with the utmost urgency in case the project is granted. More concretely, we target initiating a formal request for the additions to course programmes by June 2025 already. The existing collaboration among project partners in various InnoEnergy and international cooperation programmes means that certain procedures for double degrees exist already and we will not have to start from scratch. Continue early accreditation discussions with all partner universities during 2026; identify institution-specific approval requirements and timelines before D2.2 finalisation; use the agreed programme structure as input for an accreditation roadmap; prepare D2.3 progressively rather than waiting until M18.	WP2 Leader	**2 mentions** at Proposal stage and M4-M6 period **Status**: Ongoing, with formal requests sent in June. Certificates will be awarded by the organising universities. Starting in September, the potential accreditation of micro-credentials will be assessed, and a request for guidance will be submitted to the Project Officer.

4	Insufficient product-market fit resulting in low uptake of the programmes (impact high, likelihood low)	WP2, WP5	1	3	3	In terms of pricing the degree programme and self-standing programmes, we will make sure to carry out market validation during WP2 and WP6 and offer a multiple fee structure providing good value for money. Earlier experiences with short programme launches have led to a high interest among target audiences but slow uptake of programmes with requests for scholarships to be able to participate in the programme. To mitigate this obstacle, we will establish a diversified fee structure with different types of scholarships or fee waivers to make the programmes available to as many candidates with different financial means, socio- economic, demographic and geographical backgrounds as possible. Further, we will focus on full fee waivers early on in the programme and move towards partial fee waivers later in the programme. In this way, a lack of track record in early years can be compensated later on. The marketing & recruitment campaign will be set up to reach these specific candidates as well as possible and adapt the messaging and channels accordingly.	WP5 Leader	**1 mention** at Proposal stage **Status:** Mitigation measures are being implemented as planned, and recruitment is under way. In February 2026, InnoEnergy and ESADE jointly organised a two-day value proposition workshop in Barcelona with current students, alumni and prospective students, to gather direct evidence on the needs, expectations and financial constraints of the target audiences. Together with purchased reports on global trends in higher education, this informed the positioning of the degree programme and the self-standing modules. Building on this evidence, the WP5 team developed a new

								campaign with messaging and channels adapted to candidates from different financial, socio-economic, demographic and geographical backgrounds. The Financial Support to Third Parties (FSTP) scheme is the main instrument for lowering financial barriers, and a dedicated scholarship campaign targets female students and underrepresented groups in Digital Europe Programme (DEP) eligible countries. The recruitment campaign started in September 2026, and the first application round closes in November 2026. The team will then analyse application volumes, applicant profiles and scholarship demand,

								and adjust messaging, channels and the balance of support measures for the following rounds. The risk remains under active monitoring until these results provide the first evidence of actual uptake.

5	Specific datasets provided by industrial and research partners do not have sufficient quality or volume. Or for confidentiality issues, not enough data can be accessed (impact low, likelihood medium)	WP3	2	1	2	In order to have access to real use cases (to be addressed in courses and/or master thesis) and obtain useful data-driven models, the quality and volume of input data is essential. If poor or insufficient data is provided, other relevant data bases need to be identified or synthetic data will need to be created. Fortunately, researchers involved in the consortium already have long-standing partnerships in place to mitigate this risk, as well as broad experience in working with open-source data where this is not possible.	WP3 Leader	**1 mention** at Proposal stage **Status**: WP3 organised a dedicated meeting with the industrial partners to clarify what data each of them can provide for the programme. Individual follow-up meetings are now taking place with each partner to establish the format, level of detail and conditions under which the data can be shared. In addition, the 3rd Consortium Meeting, taking place on 13 November 2026 in Barcelona, includes a dedicated session on strengthening the engagement of industrial partners across the consortium. The risk remains under active monitoring while the data-sharing arrangements are being finalised.

6	Delay in curriculum delivery due to conflicting priorities among academic partners or students not being able to validate prerequisite modules (impact high, likelihood low) Delays in curriculum definition (must be defined before Summer 2026), 2 milestones at risk of delay: (D3.1) Accreditation requirements of some HE institutions may impose restrictions on subjects and course content, limiting flexibility in programme design. D3.1 is fundamental to our WP, as it defines the courses that will be delivered (and also those that need to be restructured or developed from scratch). (D3.3) Development of the eLearning modules may face delays due to underestimation of workload, limited availability of contributors, or lack of coordination across partners.	WP3, WP4	1	3	3	To avoid delays, we will maintain open communication channels, allocate dedicated priorities among academic partners or students not being able to validate prerequisite modules (impact high, likelihood low). Close interaction with WP2 leaders Reason: dependance on WP2 for the design of the curriculum, which directly feeds into D3.1	WP3 & WP4 Leaders	**2 mentions** at Proposal stage and M1-M3 period **Status:** Regular project meetings and close communication among partners have supported timely delivery, and Deliverable D2.2 was submitted on time. To limit the risk of delays in WP3 deliverables, a production timeline for the online stackable modules was developed based on partner availability. To date, all partners have delivered their content as planned. The risk remains under active monitoring, and mitigation measures will be put in place as needed.

	D3.3 is basic for the stackable modules. We have set an internal team deadline for M22 to ensure that the 2027 intake has access to the complete set of materials from the outset, with all content uploaded and beta-tested in advance. It would also allow approximately two months for teachers to explore which modules could complement their courses.							

7	Operational issue (hybrid room not available for instance) (impact low, likelihood medium)	WP4	2	1	2	We will create alternative teaching methods that could rely on asynchronous teachings rather than solely live ones, as well as invest in expanding the infrastructure availability for the project. The risk will also be partially mitigated by dispatching teaching units among partners based on existing constraints	WP4 Leader	**1 mention** at Proposal stage **Status**: WP4 held a series of meetings with all partner universities to verify that the hybrid classroom facilities and equipment needed for smooth teaching are in place. All partners have confirmed that they have the required facilities and equipment. The partner universities also already deliver hybrid teaching in other InnoEnergy programmes, so they bring established experience in this delivery format to AI4GreenDeal. The risk remains under active monitoring, and the readiness of the facilities will be reconfirmed ahead of the first intake in September 2027.

8	Economic Downturns affect the buying decision of interested candidates for the programmes (impact medium, likelihood low)	WP5	1	2	2	To mitigate this risk, we will integrate a buffer in long-term sustainability of the programme with scholarship amendments and include different, worst- good- and best-case scenarios in the business model for running the programmes both during and after the project.	WP5 Leader	**1 mention at Proposal stage** **Status:** The recruitment campaign started in September 2026 and the first application round closes in November 2026. The analysis of application volumes, applicant profiles and scholarship demand will be used to calibrate the scenario assumptions and to adjust campaign messaging, channels and the balance of support measures for the following rounds. The risk remains under active monitoring, and the scenarios will be updated as enrolment data becomes available.

9	Slowdown of the programme uptake after the project ends (impact medium, likelihood medium)	WP6	2	2	4	To ensure the financial sustainability of the project and make sure the programme will keep on running after the project we will develop a multi-year business plan detailing all costs and revenue with a realistic growth plan. The new degree specialisation and the additional life-long learning modules will be integrated into the existing InnoEnergy Master school offer and the collaboration within the consortium will be continued with a contract detailing responsibilities and benefits for all partners. We will look for other sources of funding to keep on offering scholarships and fee waivers, such as in the form of an endowment fund.	WP6 Leader	**1 mention** at Proposal stage **Status:** The risk remains under active monitoring, and the scenarios will be updated as enrolment data becomes available.
10	A partner needs to leave the consortium (impact medium, likelihood low)	WP1	1	2	2	If a partner needs to step out of the project because of any given reason, the project consortium will look for ways to either replace the partner by a similar partner profile (as a new partner or a non-beneficiary/associated partner),or distribute the responsibilities over the other partners where possible. With the extensive InnoEnergy ecosystem of partners and portfolio companies, different solutions can be explored, for a different university partner providing curriculum design advise and internships/master theses.	Coordinator	**1 mention** at Proposal stage **Status**: this risk has not happened yet

11	A physical consortium meeting cannot take place because of unforeseen circumstances such as strikers, health problems or excessive travel costs (impact low, likelihood medium)	WP1	2	1	1	To mitigate this risk, we will make sure to schedule physical meetings during periods and at locations with reasonable expected room availabilities and prices. Meetings will be planned well in advance and whenever possible, rebookable tariffs will be used. When not everyone can make it to the location after all, we will make use of our options for hybrid meetings. In case of sickness of one of the partner collaborators, the partner will delegate a colleague who can represent them.	Coordinator	**1 mention** at Proposal stage **Status:** this risk has not happened yet
12	Lack of interoperability of data and data access for universities (impact medium, likelihood high)	WP3	3	2	6	To mitigate this risk, we will make maximum use of open source tools that are industry standard and put together a standard toolbox for data collection and analysis, a shared cloud computing infrastructure and data analysis platform and a sharing of notebooks, libraries and datasets. There is a high likelihood that full interoperability between universities will not be achieved entirely, but the teachers and students will use shared tools as much as possible to save time and resources and make a sustainable use of data and computing resources.	WP3 Leader	**1 mention** at Proposal stage **Status**: this risk has not happened yet

13	Insufficient student numbers per university (impact high, likelihood medium)	WP5	2	3	6	150 graduated or enrolled students for the degree programme is an ambitious target in itself. Having an equal spread of 25 students/university/cycle is also challenging. Active communication and recruitment campaigns will be set up to recruit students in key regions and with different profiles and to promote the offer in our different universities with specialised course offers and location benefits. To mitigate the risk of low intake numbers in certain universities, we will organise the admissions with the universities with an equal spread of students in mind. We will strive to reach the target by establishing a fee structure with different types of scholarships or fee waivers that encourages students to take the programme in different universities. However, the key KPI will be the 150 graduated or enrolled students for the degree programme and will prevail over that of the equal distribution over the different universities if there should be a conflict between the 2 targets. To mitigate the risk of having insufficient numbers per intake (75 per cycle), we will discuss with Hadea the options for spreading 150 degree programme students over 3 cycles if accreditation procedures allow for it.	WP5 Leader	**1 mention** at Proposal stage **Status:** an internal KPI tracker with concrete planned work was developed in June 2026 by the Coordinator and Schuman Associates. This tool will be monitored regularly. The risk remains under active monitoring, and the scenarios will be updated as enrolment data becomes available.

14	Difficulty aligning curriculum structures and AI/Data Science integration across partner universities. Partner universities have different existing curricula, course structures, ECTS systems, and approaches to AI/DS integration, which may make it challenging to define a coherent programme structure.	WP2	2	2	4	Start curriculum mapping early; use a common categorisation of courses; compare Energy, AI/DS, entrepreneurship and general components across universities; organise regular WP2 coordination meetings; identify gaps and inconsistencies before D2.2 finalisation.	WP2 Leader	**1 mention** during the M1-M3 period **Status:** Regular project meetings and close communication among partners have supported timely delivery, and Deliverable D2.2 was submitted on time.
15	Late submission of milestone 21 due to process review	WP4	1	3	3	WP4 kick-off on the week of the 15/01/2026 and discussion of the progress of the milestone	WP4 Leader	**1 mention** during the M1-M3 period **Status:** Milestone M21 was achieved on time, and the risk did not materialise.
16	Deliverable/Milestone at Risk of Delay: D3.1. Programme Brochures Effect to be nuanced but is necessary for marketing purposes	WP3	2	2	4	Send all the information available although some details are missing to advance with material production. To be solved during 3rd week of June.	WP3 Leader	**2 mentions:** for M1-M3 & M4-M6 periods **Status**: The risk did not materialise. All partners provided the information needed for the marketing brochure on time.

17	Dependence on inputs/deliverables by other WPs/Partners: Academic team finalising the programme Missing: Finalised AESAI programme information — specialisations list, updated courses and syllabus, Innovation and Entrepreneurship journey content and French language course confirmation. Late delivery of finalised programme content from academic partners, preventing timely production of marketing materials ahead of the August recruitment campaign launch. Consequence: Deliverable/Milestone including the markteting materials and campaing assets for the AESAI programme is at risk of delay	WP5	1	3	3	Deadline of 3rd June set for all content submissions. Production to begin immediately upon receipt. Parallel workstreams in place where possible to reduce dependency bottlenecks.	WP5 Leader	**1 mention** during the M4-M6 period **Status**: The risk did not materialise. All partners provided the information needed for the marketing brochure for the recruitment campaign on time.

18	Dependence on inputs/deliverables by other WPs/Partners: BIE strategy that needs input from other partners regarding the general programme innovation strategy and also from ESADE professors The validation of the scenarios as a next step is missing because of the number of rounds on the validation and the workload	WP6	1	2	2	Send reminders to the partners involved in the BIE strategy whose inputs are needed at a prior stage Set a fixed deadline for these partners, with the ones needed at the earliest stage to submit it the soonest A quick alignment meeting to ensure a smooth process among the partners might be helpful.	M. Jose de la Maza	**1 mention** during the M4-M6 period **Status**: The risk did not materialise. All partners provided the information needed for D6.1 which was submitted on time.

Annex 4 – Annual Risk Assessment Questionnaire: feedback received

WP 1 – Project Management, Quality Assurance & Impact Assessment

WP Leader: Eylem Tasdemir, InnoEnergy

Date of submission: 15/10/2026

Section A – WP Progress & Risk Evolution (Yearly overview)

A1. Overall WP risk status (select one):

☐ Low (stable, no major concerns)

☐ **Medium (some risks require mitigation/monitoring)**

☐ High (critical risks or delays likely / already occurring)

A2. Compared to the beginning of the year, the overall risk level of this WP is:

☐ Decreased

☐ Stable

☐ **Increased**

A3. Briefly explain the main reasons for the change (if any):

Free text: _____

Section B – Risks materialised during the year (what happened)

B1. Did any risks materialise (partially or fully) during this year?
☐ **Yes** ☐ No

If Yes, please list up to 3 key risks:

Risk description	Impact on WP (deliverables/milestones/KPIs)	Likelihood (1–3)	Severity/ Impact (1–3)	Proposed mitigation actions
Resignation of the former WP4 leader from Grenoble INP-UGA. He was to provide one online module and co-develop another with other universities as subject matter expert	WP4: possible delay in delivering the online stackable modules that Grenoble INP-UGA is responsible for.	2	2	The former WP4 leader debriefed the new WP4 leader and drafted a roadmap for the new leadership. The new WP4 leader and his colleagues at Grenoble INP-UGA are working to replace the lost expertise and to take over the module development.

Departure of the Masters+ and Skills Institute Marketing Lead, who leaves her role at the end of October 2026. This may negatively affect student recruitment for the AESAI programme	[WP5:] Possible decrease in enrollments for the AESAI programme, putting the recruitment KPIs at risk.	2	2	A comprehensive, fully automated and data-based recruitment plan has been created. Mitigation plans are ready if enrollments decrease. A full-time marketer is dedicated to the project to keep everything in order. The InnoEnergy Head of Marketing and Communication takes on more roles and responsibilities to deliver the KPIs.

Section C – Mitigation effectiveness & lessons learned

C1. For the mitigation actions implemented this year, the overall effectiveness was:

☐ **Effective (risk reduced)**

☐ Partially effective (risk reduced but still present)

☐ Not effective (risk unchanged or increased)

☐ Not applicable (no mitigation needed)

C2. What mitigation actions worked best and why?

Free text: Asking partners to track their activities and expected expenditure in our internal InnoInsight tool worked best. It gives the consortium an up-to-date view of spending against the budget, so we can see early whether we are on track and act before a deviation becomes a problem.

C3. What did not work as expected and why?

Free text: _____

C4. Lessons learned to improve risk prevention next year (max 5 bullet points):

- Map key-person dependencies at the start of each year. List who holds unique expertise or a critical role (WP leaders, subject matter experts, marketing and recruitment leads) and name a deputy for each.
- Make a handover pack standard. Require a short written roadmap and a debrief with the successor when anyone in a key role changes. The WP4 and WP5 handovers worked well and should become the template.
- Share expertise across partners from the start. Assign a second expert to each module or deliverable, or agree a pool of backup experts across the consortium, so one departure doesn't stall a deliverable.
- Document and automate core processes. The data-based recruitment plan showed that documented, automated processes keep running through a staff change. Apply the same approach to other recurring activities.

WP2 – Curriculum design and accreditation

WP Leader: KU Leuven

Date of submission: 21/10/2026

Section A – WP Progress & Risk Evolution (Yearly overview)

A1. Overall WP risk status (select one):

✓ Low (stable, no major concerns)

☐ Medium (some risks require mitigation/monitoring)

☐ High (critical risks or delays likely / already occurring)

A2. Compared to the beginning of the year, the overall risk level of this WP is:

☐ Decreased

✓ Stable

☐ Increased

A3. Briefly explain the main reasons for the change (if any):

Free text: The risk level stayed low and stable. The curriculum structure and mobility pathways are in place across all partners, and the remaining open points are routine items handled through the Steering Committee.

Section B – Risks materialised during the year (what happened)

B1. Did any risks materialise (partially or fully) during this year?
☐ Yes ✓ No

If Yes, please list up to 3 key risks:

Risk description	When did it occur? (month)	Root cause	Impact on WP (deliverables/milestones/KPIs)	Likelihood (1–3)	Severity/ Impact (1–3)	Proposed mitigation actions

Section C – Mitigation effectiveness & lessons learned

C1. For the mitigation actions implemented this year, the overall effectiveness was:

✓ Effective (risk reduced)

☐ Partially effective (risk reduced but still present)

☐ Not effective (risk unchanged or increased)

☐ Not applicable (no mitigation needed)

C2. What mitigation actions worked best and why?

Free text: Keeping one shared source for all course and ECTS data, with agreed counting rules, worked best. It kept the curriculum documents consistent across partners and showed issues early. Mapping each mobility pathway also brought out institution-specific constraints before admissions.

C3. What did not work as expected and why?

Free text: _____

C4. Lessons learned to improve risk prevention next year (max 5 bullet points):

- Set internal partner deadlines well ahead of external ones.
- Check curriculum data for consistency before each deliverable.
- Review institutional rules whenever courses or pathways change.
- Escalate cross-partner issues to the Steering Committee early.
- Keep a simple action log with owners and dates.

WP3 – Programme Development

WP Leader: Mònica Aragüés, Marc Jené, Óscar Cabrera / UPC

Date of submission: 21/10/2026

Section A – WP Progress & Risk Evolution (Yearly overview)

A1. Overall WP risk status (select one):

☐ Low (stable, no major concerns)

x Medium (some risks require mitigation/monitoring)

☐ High (critical risks or delays likely / already occurring)

A2. Compared to the beginning of the year, the overall risk level of this WP is:

☐ Decreased

x Stable

☐ Increased

A3. Briefly explain the main reasons for the change (if any):

Free text: Developing the online stackable modules requires substantial input from multiple partners, so a delay in one area can cascade across the project. To mitigate this risk, we have designed a schedule that spreads deliverables across the project timeline, allowing NIIT to work on new modules continuously.

Section B – Risks materialised during the year (what happened)

B1. Did any risks materialise (partially or fully) during this year?
x Yes ☐ No

If **Yes**, please list up to **3 key risks**:

Risk description	When did it occur? (month)	Root cause	Impact on WP (deliverables/milestones/KPIs)	Likelihood (1–3)	Severity / Impact (1–3)	Proposed mitigation actions
Delays in the development of online stackable modules	M12	Participation of different partners with multiple steps to follow.	Risk to not meet the deliverable deadline if not mitigated.	2	3	Outline clear guidelines and share them among the participants. Close progress monitoring.

Section C – Mitigation effectiveness & lessons learned

C1. For the mitigation actions implemented this year, the overall effectiveness was:

☐ Effective (risk reduced)

x Partially effective (risk reduced but still present)

☐ Not effective (risk unchanged or increased)

☐ Not applicable (no mitigation needed)

C2. What mitigation actions worked best and why?

Free text: Assigning learning blocks early to different partners provided with a roadmap to follow with enough anticipation. Actively participating and following WP2 allowed to start working on course development while the programme was still being defined.

C3. What did not work as expected and why?

Free text: Generating synthetic data from industrial partner's data. Due to delays in partner's collaboration, this approach hasn't been explored yet.

C4. Lessons learned to improve risk prevention next year (max 5 bullet points):

- **Parallel task execution:** Given the transversal nature of the work package and the diversity of partners involved, activities will be carried out in parallel wherever possible to optimise timelines and prevent bottlenecks.

- **Shared understanding of guidelines:** Clear guidelines for the development of the online stackable modules will be produced and validated with all partners to ensure a consistent interpretation and a harmonised approach across the consortium.
- **Close progress monitoring:** The status of each task will be closely monitored across all partners, so that potential delays are identified early and addressed before they cascade into subsequent activities.

WP 4 – Programme management and delivery

WP Leader: Grenoble INP-UGA

Date of submission: 15/10/2026

Section A – WP Progress & Risk Evolution (Yearly overview)

A1. Overall WP risk status (select one):

X Low (stable, no major concerns)

☐ Medium (some risks require mitigation/monitoring)

☐ High (critical risks or delays likely / already occurring)

A2. Compared to the beginning of the year, the overall risk level of this WP is:

☐ Decreased

X Stable

☐ Increased

A3. Briefly explain the main reasons for the change (if any):

Free text: _____

Section B – Risks materialised during the year (what happened)

B1. Did any risks materialise (partially or fully) during this year?
☐ Yes **X** No

If **Yes**, please list up to **3 key risks**:

Risk description	When did it occur? (month)	Root cause	Impact on WP (deliverables/milestones/KPIs)	Likelihood (1–3)	Severity/ Impact (1–3)	Proposed mitigation actions

Section C – Mitigation effectiveness & lessons learned

C1. For the mitigation actions implemented this year, the overall effectiveness was:

X Effective (risk reduced)

☐ Partially effective (risk reduced but still present)

☐ Not effective (risk unchanged or increased)

☐ Not applicable (no mitigation needed)

C2. What mitigation actions worked best and why?

Free text**: Partners stay in regular contact through calls, video calls, e-mails, and monthly, bi-weekly and ad hoc meetings, which helps maintain a stable and smooth operational relationship.**

C3. What did not work as expected and why?

Free text: _____

C4. Lessons learned to improve risk prevention next year (max 5 bullet points):

- **Transparent communication within WP leaders**
- **Regular meetings and punctual meetings based on current needs**

WP 5 – Marketing

WP Leader: Sahara Alshawaf - InnoEnergy

Date of submission: [21/10/2026]

Section A – WP Progress & Risk Evolution (Yearly overview)

A1. Overall WP risk status (select one):

☑ Low (stable, no major concerns)

☐ Medium (some risks require mitigation/monitoring)

☐ High (critical risks or delays likely / already occurring)

A2. Compared to the beginning of the year, the overall risk level of this WP is:

☐ Decreased

☑ Stable

☐ Increased

A3. Briefly explain the main reasons for the change (if any):

Free text: _____

Section B – Risks materialised during the year (what happened)

B1. Did any risks materialise (partially or fully) during this year?
☐ Yes ☑ No

If **Yes**, please list up to **3 key risks**:

Risk description	When did it occur? (month)	Root cause	Impact on WP (deliverables/milestones/KPIs)	Likelihood (1–3)	Severity/ Impact (1–3)	Proposed mitigation actions

Section C – Mitigation effectiveness & lessons learned

C1. For the mitigation actions implemented this year, the overall effectiveness was:

☐ Effective (risk reduced)

☐ Partially effective (risk reduced but still present)

☐ Not effective (risk unchanged or increased)

☑ Not applicable (no mitigation needed)

C2. What mitigation actions worked best and why?

Free text: _____

C3. What did not work as expected and why?

Free text: _____

C4. Lessons learned to improve risk prevention next year (max 5 bullet points):

WP6 – Program innovation & entrepreneurship and sustainability

WP Leader: Maria José de la Maza (ESADE)

Date of submission: 21/10/2026

Section A – WP Progress & Risk Evolution (Yearly overview)

A1. Overall WP risk status (select one):

☐ Low (stable, no major concerns)

☐ Medium (some risks require mitigation/monitoring)

☐ High (critical risks or delays likely / already occurring)

A2. Compared to the beginning of the year, the overall risk level of this WP:

☐ Decreased

☐ Stable

☐ Increased

A3. Briefly explain the main reasons for the change (if any):

The biggest current risk (different than at the beginning of the year) is the development of our 2 latest Stackable courses, which need to be ready by end of March 2027 for NIIT to develop the courses.

Section B – Risks materialised during the year (what happened)

B1. Did any risks materialise (partially or fully) during this year?
☐ Yes **☐ No**

If **Yes**, please list up to **3 key risks**:

Risk description	When did it occur? (month)	Root cause	Impact on WP (deliverables/milestones/KPIs)	Likelihood (1–3)	Severity/ Impact (1–3)	Proposed mitigation actions

Section C – Mitigation effectiveness & lessons learned

C1. For the mitigation actions implemented this year, the overall effectiveness was:

☐ Effective (risk reduced)

☐ Partially effective (risk reduced but still present)

☐ Not effective (risk unchanged or increased)

☐ Not applicable (no mitigation needed)

C2. What mitigation actions worked best and why?

Free text: _____

C3. What did not work as expected and why?

Free text: _____

C4. Lessons learned to improve risk prevention next year (max 5 bullet points):