GreenTech HORIZONS

Fostering Dual Green and Digital Transitions through Education and Innovation in the Neighbourhood East, Central Asia, and Asia

Co-funded by the European Union

Deliverable 2.2
Competency Framework for Twin Green & Digital Transition

WP2 - Design a Competency-Oriented Learning Ecosystem

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V4.0	14-04-2025	Danijela Ciric Lalic	Final version

Table with Acronyms

Acronym	Full Form
AI	Artificial Intelligence
AR	Augmented Reality
ATU	Azerbaijan Technological University
AzET	Azerbaijan Scientific-Research and Design-Prospecting Power Engineering Institute
AzTU	Azerbaijan Technical University
CBHE	Capacity Building in the Field of Higher Education
CDO	Chief Data Officer
CSO	Chief Sustainability Officer
CSR	Corporate Social Responsibility
DApps	Decentralized Applications
EA	European Academy
EIA	Environmental Impact Assessment
EPG	Power Progress Group
EQF	European Qualifications Framework
GDPR	General Data Protection Regulation
IaC	Infrastructure-as-Code
IoT	Internet of Things
KTU	Kaunas University of Technology
LEED	Leadership in Energy and Environmental Design
ML	Machine Learning
MUST	Mongolian University of Science and Technology
NLP	Natural Language Processing
NUM	The National University of Mongolia
RTU	Riga Technical University
UI	User Interface
UITM	The University of Information Technology and Management in Rzeszow
UNIST	University of Split
UNS	University of Novi Sad
UX	User Experience
VERTO	Verto Business Limited Liability Partnership's
VR	Virtual Reality
WP	Work Package

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EXECUTIVE SUMMARY

The **Competency Framework for the Twin Green and Digital Transition** provides a strategic and operational blueprint for equipping professionals, educators, institutions, and policymakers with the skills and capabilities required to lead and support the dual transformation toward a sustainable and digitally empowered future. In an era defined by climate crisis and exponential technological development, the need to integrate green and digital skills into workforce development, education, and innovation systems has become both urgent and systemic.

This framework has been developed under the *GreenTech Horizons* initiative through a rigorous, evidence-based, and participatory process involving stakeholders across Azerbaijan, Kazakhstan, and Mongolia. Drawing on international best practices, including EU frameworks such as **GreenComp**, **DigComp**, and the **European Qualifications Framework (EQF)**, the structure enables cross-sectoral applicability and regional adaptation.

Organized into three interconnected sub-frameworks—**Green Competencies**, **Digital Competencies**, and **Business Competencies**—the framework defines a total of **16 competency areas** and **72 specific competencies**, each mapped across **five progressive levels** (L1–L5) corresponding to EQF levels 3 to 8. These levels reflect increasing degrees of autonomy, complexity, and leadership, and are designed to support career progression, upskilling, and lifelong learning pathways.

Key features include:

- A holistic structure that supports curriculum development, training design, HR planning, and policy alignment;
- Integration of sustainability knowledge with advanced digital fluency and strategic business skills;
- Clear alignment with EQF descriptors and international learning outcomes;
- Practical guidance through competency descriptors, sub-level indicators, career pathways, and assessment criteria;
- A modular design adaptable to multiple contexts—academic, corporate, public sector, and non-formal education.

The framework development process involved:

- **Scoping research** of over 100 strategic and policy documents, 40+ academic programs, and 50+ economic sectors;
- **Empirical data collection** from 895 professionals and 125 HEI representatives across the three countries;
- **Iterative stakeholder validation**, resulting in refinements to structure, terminology, and policy coherence.

This document is intended as a strategic resource for:

- **Higher education institutions** undertaking curriculum reform and skills alignment;
- **Employers and HR professionals** designing talent development programs for the twin transition;
- **Policy actors** at national and regional levels formulating strategies for green growth and digital innovation;
- **Training providers and certification bodies** developing micro-credentialing systems;

- **Learners and professionals** navigating transition-oriented careers.

As both green and digital transitions continue to evolve, this framework should be considered a **living document**—ready to be updated in response to changing technologies, regulatory developments, and labor market dynamics. It lays the foundation for resilient, adaptable, and forward-looking education and workforce systems that are essential to sustainable development in the 21st century.

1. INTRODUCTION

The global transition toward environmentally sustainable and digitally enabled societies has become a defining priority of the 21st century. Accelerating climate change, ecosystem degradation, biodiversity loss, and growing socio-economic inequalities are converging with rapid developments in artificial intelligence, robotics, data infrastructures, and automation. These concurrent transformations—ecological and digital—are not unfolding in isolation. They are **mutually reinforcing and deeply interdependent**, shaping the future of economies, societies, and governance systems in ways that are increasingly complex and unpredictable.

This dual transformation, commonly referred to as the **twin green and digital transition**, lies at the heart of the European Union's long-term vision for a just, sustainable, and competitive future. Initiatives such as the **European Green Deal**, the **Digital Decade strategy**, and the **Skills Agenda for Europe** call for new approaches to how knowledge is produced, how skills are developed, and how people are empowered to contribute to and lead systemic change. These transitions are not merely technical shifts—they represent a profound rethinking of how we work, learn, innovate, and collaborate.

However, the twin transition also presents **cross-cutting challenges** that cut across sectors, professions, and policy domains. Success in this context depends not only on narrow domain-specific expertise but also on a **new generation of transversal competencies**—including systems thinking, digital and ecological literacy, ethical leadership, adaptability, innovation, and intersectoral collaboration.

Educational systems, training providers, employers, and public institutions are increasingly confronted with the task of preparing learners and workers for **jobs that do not yet exist, using technologies that are still emerging, to solve problems we have only begun to understand**. Yet existing frameworks for professional development are often fragmented, reactive, or disconnected from the realities of systemic transition.

In response to these demands, the **Competency Framework for the Twin Green and Digital Transition** has been developed as a **structured, integrative, and future-oriented model** to guide the identification, development, and assessment of skills and knowledge relevant to both sustainability and digitalization. The framework offers a shared reference for education providers, employers, professionals, and policymakers, helping to bridge the persistent gap between education and practice, between intention and implementation.

Crucially, this framework recognizes that neither the green nor the digital transition can be successfully achieved in isolation. Digital innovation must serve environmental and social goals, while sustainability must leverage the full potential of data, automation, and intelligent systems. The framework responds to this reality by offering **a holistic structure** that integrates green, digital, and business competencies in support of inclusive, just, and resilient transitions.

By fostering alignment between competence development and long-term policy objectives, the Competency Framework aims to equip current and future generations with the capabilities to not only **adapt to change**, but to **lead it responsibly and strategically**.

1.1 Aim of the Document

The aim of this document is to present a comprehensive, integrated **Competency Framework for the Twin Green and Digital Transition**, developed to support professionals, institutions, and systems in building the skills and capacities required for a sustainable and digitally advanced future. The framework is intended as both a reference model and a practical tool for structuring education, training, and workforce development across sectors and regions.
The green and digital transitions must be approached **not as separate or sequential efforts**, but as fundamentally **interdependent transformations**. Sustainability cannot be achieved without leveraging the power of digital innovation, while digitalization that is not grounded in sustainability risks accelerating resource depletion, inequality, and systemic fragility.

- **Digital technologies**—such as artificial intelligence, big data analytics, Internet of Things (IoT), and smart systems—can play a critical role in advancing sustainability by optimizing energy systems, improving resource efficiency, enabling circular economy models, and supporting evidence-based decision-making.
- **Green principles**—including environmental justice, resource efficiency, and planetary boundaries—must, in turn, be embedded in the development and deployment of digital tools to ensure they promote regeneration rather than exacerbate environmental harm.

This bidirectional relationship calls for a **unified skills agenda** that prepares individuals and organizations to operate at the intersection of technological innovation and ecological responsibility. Without such alignment, digitalization may undermine climate targets, and sustainability efforts may lack the scale, precision, and agility that digital tools can provide.
The Competency Framework for the Twin Green and Digital Transition responds to this need by identifying the specific skills, knowledge areas, and attitudes required to **lead, implement, and support the twin transition in an integrated manner**.

1.1.1 Core Objectives of the Framework

The Competency Framework is designed to:

- Provide a **structured and scalable model** for developing green and digital transition competencies across education, employment, and policy domains;
- Identify and organize **16 key competency areas** across three interconnected sub-frameworks: Green, Digital, and Business;
- Define progression across **five levels of mastery (L1–L5)**, aligned with the European Qualifications Framework (EQF), to support career development and talent planning;
- Enable institutions to design **modular curricula, micro-credentials, and assessment tools** tailored to transition needs;
- Support organizations in aligning **workforce strategies, innovation priorities, and sustainability objectives**;
- Contribute to the development of national and EU-wide **policy instruments**, including ESG integration, skills strategies, and education reforms.

1.1.2 Intended Users and Beneficiaries

This framework is intended for a wide range of stakeholders actively involved in shaping the green and digital transitions, including:

- **Professionals and practitioners** across public, private, and civil society sectors: Whether at entry-level or in leadership roles, individuals working in sustainability, digitalization, policy, innovation, or project management can use the framework to guide their competence development, career progression, and cross-sectoral mobility.
- **Educators, trainers, and curriculum developers**:
  Higher education institutions, vocational training providers, and lifelong learning platforms can apply the framework to design future-oriented learning pathways, integrating twin transition competencies into teaching strategies, content, and assessment models.
- **Businesses and employers**:
  Companies aiming to align with green regulations, digital innovation goals, or ESG standards can use the framework to map internal competencies, design strategic upskilling programs, and build transition-ready teams. It also supports HR functions in recruitment, performance evaluation, and role design.
- **Policy-makers, regulators, and public authorities**:
  National and regional governments, as well as EU institutions, can leverage the framework to inform qualification frameworks, funding mechanisms, and skills strategies. It serves as a resource for policy coherence, especially where education, climate, innovation, and labour agendas intersect.
- **Civil society, youth organizations, and development agencies**:
  The framework can be used to foster community-based education, promote inclusive transition opportunities, and support the design of programmes targeting marginalized or underrepresented groups in sustainability and digital fields.

1.2 How to Use This Framework

The **Competency Framework for the Twin Green and Digital Transition** is designed to serve as a practical and strategic tool for a broad range of users, including professionals, educators, organizations, and policymakers. It supports the development of structured learning pathways, targeted upskilling strategies, and system-level alignment between sustainability, digital innovation, and workforce transformation.
The framework can be applied in multiple ways, depending on the context and purpose of the user. Its structure—based on 16 competency areas, 72 individual competencies, and five progressive levels of expertise (L1–L5)—allows for **flexibility, scalability, and contextual adaptation** across sectors and regions.

1.2.1 Career Progression Pathways

The framework provides clearly defined **competence levels**, from entry-level (L1 – Associate) to high-level leadership and policy influence (L5 – Principal), making it a valuable tool for:

- Mapping individual career trajectories within sustainability and digital domains;
- Designing structured learning journeys for professionals across technical, managerial, and strategic roles;
- Identifying expected capabilities for specific roles, functions, or transition-related projects;
- Supporting cross-sector mobility and interdisciplinary growth, particularly for professionals moving between academia, industry, and the public sector.

Each level builds on the one before it, enabling learners to move from basic awareness and application to strategic integration and global leadership in transition-related fields.

1.2.2 Competency Development and Learning Design

The framework can be used to **design educational programmes**, short courses, micro-credentials, and other learning interventions by:

- Clearly articulating learning outcomes based on real-world transition needs;
- Structuring content around progressive sub-level competencies, allowing learners to advance through increasing levels of mastery;
- Supporting the development of modular, stackable learning pathways, particularly relevant for lifelong learning and adult education;
- Enabling customization of content by sector, region, or learner profile.

Organizations and training providers can use the framework to **assess current competence levels**, identify gaps, and create targeted programmes for upskilling and capacity-building.

1.2.3 Assessment Criteria and Performance Evaluation

Each competency level is accompanied by assessment indicators that allow for the measurement of knowledge application, performance, and professional growth. These criteria can be used to:

- Self-assess current capabilities and define personal development plans;
- Develop competency-based appraisal systems within organizations;
- Evaluate the impact and effectiveness of training programmes;
- Enable external validation of skills through certification, accreditation, or digital credentials.

This approach supports both formative and summative evaluation and aligns with European best practices for quality assurance in education and training.

1.2.4 Strategic Integration into Organizational and Policy Processes

The framework provides a reference model for embedding transition-relevant competencies into wider institutional and strategic processes. It can be used to:

- Align HR strategies, workforce planning, and talent development with long-term transition priorities;

- Map competencies to organizational functions, roles, and responsibilities, enabling better role clarity and internal mobility;
- Support ESG and CSR strategies by integrating sustainability and digital literacy into core operations and staff development;
- Inform the development of institutional strategies, policy instruments, and funding programmes that support green and digital transitions.

Its structure and EQF alignment also facilitate recognition across national qualification frameworks and support the **harmonization of skills development systems** across borders.

1.3 Methodology

1.3.1 Development Steps

The development of the **Competency Framework for the Twin Green and Digital Transition** followed a multi-stage, evidence-informed, and participatory process that combined qualitative and quantitative research methods with iterative stakeholder validation. Inspired by the approach taken in the creation of GreenComp, DigComp, and other EU-level frameworks, the process integrated desk research, empirical data collection, expert feedback, and multi-country contextualization to ensure both robustness and applicability.
This iterative and layered process ensured that the framework would be grounded in real-world data, reflect regional specificities, and align with internationally recognized standards such as the European Qualifications Framework (EQF). The stages described below outline how the framework evolved from conceptual mapping to empirical validation and final consolidation.

Figure 1. Main steps to develop the Competency Framework

1st Step - Scoping Phase and Initial Mapping (Q4 2024)
The process began with an extensive scoping study to map the educational, industrial, and policy landscapes related to green and digital transitions. This included:

- Desk research and review of over 100 international and national reports, strategies, and frameworks;
- Cross-analysis of more than 40 higher education programmes in STEM, business, and sustainability fields;
- Sectoral assessments of job markets across 50+ economic sectors to determine emerging skills and occupational demands;
- A comparative analysis of existing competency frameworks, such as GreenComp (EU), DigComp (EU), SFIA (global IT competencies), and the UNESCO Future of Education roadmap.

This scoping enabled the identification of key transition drivers, structural barriers, and educational gaps, forming the baseline for competence modeling.

2nd Step - Empirical Data Collection (Q1 2025)
To triangulate findings, a mixed-method approach was adopted, including:

- A large-scale online survey of 895 professionals from enterprises and public institutions in the three countries. Key findings included:
  - 75% of respondents identified major skill shortages in areas such as AI, IoT, green energy, and sustainability reporting;
  - 60% of organizations faced difficulties recruiting sustainability-oriented professionals;
- Semi-structured interviews with 125 representatives from higher education institutions (HEIs), which revealed:
  - Only 30% of HEI programmes currently integrate both green and digital competencies;
  - Misalignment between academic outcomes and labour market needs was a recurring concern.

3rd Step - Drafting of the First Proposal (Q2 2025)
Based on the evidence collected, an initial draft of the Competency Framework was developed. This version:

- Introduced three sub-frameworks: Green, Digital, and Business;
- Defined 16 Competency Areas and 72 Competencies, each with five levels (L1–L5), aligned with the European Qualifications Framework (EQF);
- Included examples of career progression, assessment criteria, and application pathways across sectors.

4th Step - Consortium Feedback and Refinement (Q2 2024)
The first draft was presented to all GreenTech Horizons project partners for structured feedback, involving both content experts and institutional stakeholders. Key feedback included:

- Calls for stronger linkage between the framework and policy documents such as the EU Green Deal, Digital Decade, and UN SDGs;
- Recommendations to refine terminology and make explicit the interconnection between green and digital elements;
- Suggestions to expand the Business Competencies to include project management, ESG literacy, and stakeholder engagement.

The framework was revised accordingly, leading to the second validated version.

5th Step - Validation and Finalization (Q2 2025)
The updated version was further validated through:

- Targeted consultations with industry partners, HEIs, and training providers;
- Peer review by international experts in sustainability education, digital competencies, and curriculum development;

- Final alignment with EQF descriptors, ensuring interoperability with European skills and recognition systems.

The framework was consolidated into its final version, intended for use in curriculum reform, professional development, and policy design at institutional, national, and regional levels.

2. Structure of the Competency Framework

The **Competency Framework for the Twin Green and Digital Transition** is structured as a modular and scalable system composed of three interconnected sub-frameworks—**Green Competencies**, **Digital Competencies**, and **Business Competencies**. These three domains reflect the essential knowledge, skills, and attitudes required for individuals and institutions to navigate and lead within the twin transition landscape. The framework is designed to support application across diverse educational, professional, and policy settings, enabling flexibility while promoting a shared language for competence development.

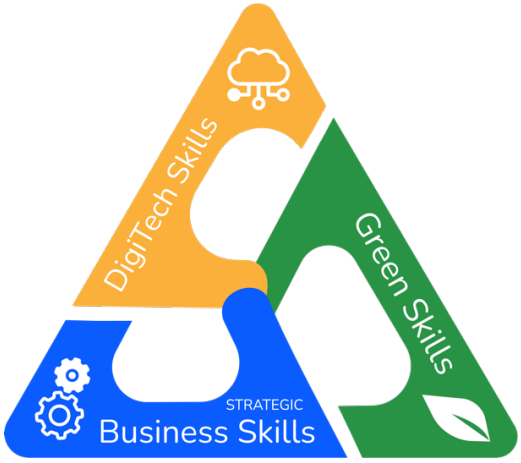

Figure 2. Triangle of Competencies for Twin Green and Digital Transition

2.1 Sub-Frameworks and Competency Areas

Each of the three sub-frameworks is divided into a set of **Competency Areas**, which represent key thematic clusters of expertise. These areas capture the core dimensions of knowledge and capability that are critical for effective performance in green, digital, and business transformation roles.

- **Green Competencies for the Twin Green and Digital Transition** focus on the skills necessary for promoting environmental sustainability through efficient resource management, ethical governance, and the development of sustainable business models. These competencies equip professionals to drive green transformations within organizations, industries, and communities.
- **Digital Competencies for the Twin Green and Digital Transition** emphasize the use of digital technologies to enhance sustainability and facilitate the green transition. This sub-framework addresses the application of digital tools—such as AI, big data, IoT,

and cybersecurity—in solving environmental challenges, improving energy efficiency, and supporting sustainable business practices.

- **Business Competencies for the Twin Green and Digital Transition** combine both green and digital imperatives, preparing professionals to lead organizations through these transitions by integrating sustainable practices with advanced digital technologies. This section focuses on the development of business models that balance economic growth with environmental and digital sustainability, fostering long-term, scalable solutions.

The full framework includes **16 Competency Areas** and a total of **72 individual competencies** across the three sub-frameworks, providing a detailed and comprehensive matrix of skills aligned with the twin transition goals.

2.2 Levels of Competency and EQF Alignment

The Competency Framework defines five progressive levels of expertise—from **Associate (L1)** to **Principal (L5)**—corresponding to increasing complexity, autonomy, and strategic responsibility. These levels are aligned with the **European Qualifications Framework (EQF)** to ensure interoperability with European education and workforce development systems.

The EQF is a common European reference framework that enables the comparison of qualifications across countries and sectors. It is structured across eight levels, each defined by descriptors of learning outcomes in terms of knowledge, skills, and responsibility/autonomy. The alignment of this framework with the EQF provides transparency and facilitates the recognition of skills acquired through formal, non-formal, and informal learning.

In addition to EQF alignment, each level also includes a **"Target Context"**, which indicates the most appropriate educational or professional setting for the application and development of competencies at that level. This guidance helps curriculum developers, training providers, and employers avoid overpromising or misaligning learning outcomes.

Below is a detailed description of each competency level, with corresponding **EQF level** and **target context**:

L1 – Associate → EQF Level: 3–4

This is the entry-level stage, where individuals demonstrate a basic understanding of concepts and terminology within a competency area. They apply foundational knowledge in familiar contexts, typically under supervision.

- **Typical profiles:** recent graduates, interns, junior technical staff
- **Responsibilities:** support tasks, simple project contributions, data gathering
- **Supervision required:** high; tasks are usually guided or monitored
- **Decision-making:** limited to predefined parameters
- **Learning outcomes (EQF link):** Apply basic knowledge and perform simple tasks under guidance; communicate routine information using appropriate tools
- **Target context:** Vocational education, upper secondary, or early undergraduate education

L2 – Professional → EQF Level: 5–6
Professionals at this level possess a solid theoretical understanding and can independently apply knowledge in a variety of contexts. They manage moderately complex tasks and work with increasing autonomy.

- **Typical profiles:** analysts, project team members, technical specialists
- **Responsibilities:** deliver project components, solve problems, report on performance
- **Supervision required:** minimal; operates autonomously within defined roles
- **Decision-making:** applies judgment within established frameworks
- **Learning outcomes (EQF link):** Exercise autonomy and judgment in familiar situations; demonstrate problem-solving skills
- **Target context:** Undergraduate and graduate (Bachelor/Master) education or early professional development

L3 – Senior Professional / Manager → EQF Level: 6–7
Professionals at this level demonstrate advanced knowledge and are capable of leading projects, supervising teams, and adapting tools and strategies to evolving challenges. They contribute to strategic planning and decision-making.

- **Typical profiles:** team leaders, senior advisors, department heads
- **Responsibilities:** manage resources and teams, deliver outcomes, mentor others
- **Supervision required:** low; expected to lead and guide
- **Decision-making:** handles ambiguity, develops context-specific strategies
- **Learning outcomes (EQF link):** Manage complex projects; take responsibility for strategic decisions
- **Target context:** Advanced Master-level programmes, executive short courses, or early managerial roles

L4 – Lead Professional / Senior Manager → EQF Level: 7–8
This level marks the transition to leadership roles involving institutional or cross-sectoral impact. Professionals guide strategy, shape systems, and drive innovation in complex settings.

- **Typical profiles:** directors, national experts, cross-sector program leaders
- **Responsibilities:** strategy formulation, policy alignment, high-level negotiations
- **Supervision required:** none; acts with institutional authority
- **Decision-making:** anticipatory, systems-level
- **Learning outcomes (EQF link):** Lead strategic change; synthesize knowledge; influence organizational direction
- **Target context:** Executive education, leadership development, public policy and sectoral consultancy

L5 – Principal / Global Thought Leader → EQF Level: 8
Professionals at this level are recognized authorities who lead international initiatives, shape global policy, and contribute to knowledge creation in their domains.

- **Typical profiles:** chief sustainability officers, global policy advisors, principal consultants
- **Responsibilities:** thought leadership, agenda setting, research-policy integration

- **Supervision required:** none; mentors others and drives vision
- **Decision-making:** long-term, visionary, global
- **Learning outcomes (EQF link):** Demonstrate highly specialized skills; lead research/innovation; influence global developments
- **Target context:** Doctoral-level education, international leadership, policy and strategy formulation at the global level

This tiered structure enables individuals to track their growth, plan career transitions, and obtain credentials aligned with internationally accepted learning outcomes. It also allows organizations to design competency-based talent development strategies and support continuous learning tailored to their green and digital transformation objectives.

2.3 Competency Composition

Each **Competency Area** comprises a set of **competencies**, each of which is described using a consistent format across all five levels. The format includes:

- **Descriptor**: Describes the scope and expectations for each level.
- **Sub-Level Competency Indicators**: Clarifies the specific knowledge, skills, and attitudes expected at each level.
- **Career Progression Pathways**: Provides examples of real-world job roles associated with each level.
- **Assessment Criteria**: Lists measurable indicators for evaluating performance and learning outcomes at each stage.

This multi-layered design makes the framework actionable across various contexts—from curriculum design and professional training to talent management and policy development.

I. GREEN COMPETENCIES FOR TWIN GREEN AND DIGITAL TRANSITION

The **Green Competencies for the Twin Green and Digital Transition** framework focuses on the integration of sustainability and environmental practices within the context of digital transformations. As the global community works to address environmental challenges while embracing the opportunities brought by digital innovation, it is crucial for professionals to develop the skills necessary to drive this dual transformation effectively. This framework aims to equip individuals with the knowledge and expertise to embed green practices into digital strategies, ensuring that the two transitions work together to build a sustainable and resilient future.

The competencies in this section span a wide array of green-focused skills, ranging from climate science and environmental management to sustainable business practices and circular economy strategies. It emphasizes the importance of understanding the interplay between digital advancements and environmental sustainability, preparing professionals to lead initiatives that promote both ecological conservation and technological innovation. The framework also addresses key areas such as renewable energy integration, resource efficiency, climate change mitigation, and sustainable urban development, all within the context of the green and digital transitions.

By developing the necessary green skills, this framework ensures that professionals are prepared to lead efforts that reduce environmental impact while leveraging the power of digital technologies. These competencies will help organizations transition to more sustainable operations, support regulatory compliance, and contribute meaningfully to global environmental goals. Ultimately, the framework empowers professionals to drive impactful, long-term change that promotes a green and digital economy, advancing sustainability in both the business and technological spheres.

1. Competency Area: Renewable Energy & Clean Technology

1.1. Expertise in solar, wind, hydro, and other renewable energy technologies

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies basic components and functions of solar, wind, and hydro energy systems and explains their relevance to the green transition.	Selects, configures, and applies renewable energy technologies in small-scale systems or pilot projects, ensuring environmental and operational fit.	Designs and implements large-scale renewable energy projects with a focus on optimization and scalability.	Leads the integration of renewable energy technologies into organizational and national energy infrastructures.	Innovates new renewable energy technologies and systems, shaping the global energy transition and setting industry standards.
Competency Examples	Explains the basic	Selects and installs	Designs and implements large-scale renewable	Directs the integration of	Pioneers new renewable

	principles of solar, wind, and hydro energy systems.	renewable energy systems in small-scale projects.	energy projects (e.g., wind farms, solar parks).	renewable energy into national grids and public infrastructure.	energy solutions and drives industry-wide adoption of innovative technologies.

1.2. Integration of renewable energy technologies into existing systems

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Describes how renewable energy systems operate together and supports their integration into existing structures under supervision.	Integrates renewable energy systems into existing infrastructures, ensuring interoperability, efficiency, and basic troubleshooting..	Leads teams to integrate renewable energy systems into large infrastructure projects.	Oversees and manages large-scale renewable energy integration efforts at the national or global level.	Designs and develops strategies for global renewable energy integration, influencing policies and standards.
Competency Examples	Assists with the installation and configuration of renewable energy systems.	Integrates solar panels into buildings or wind turbines into energy systems.	Leads large infrastructure projects involving the integration of various renewable energy technologies.	Directs the integration of renewable energy technologies into large-scale, complex systems (e.g., national grids).	Develops global strategies for integrating renewable energy across sectors, creating policy frameworks and infrastructure solutions.

1.3. Application of green technologies in business and operations

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies common green technologies and demonstrates how they can improve environmental outcomes in	Implements green technologies in operational or project contexts to increase efficiency and reduce environmental footprint.	Leads projects that incorporate green technologies to improve energy efficiency and sustainability.	Develops strategies for scaling green technologies at an enterprise level, driving global adoption.	Leads the innovation and development of new green technologies, setting trends and influencing global

	everyday operations.				sustainability policies.
Competency Examples	Demonstrates basic knowledge of green technologies like energy-efficient lighting or low-carbon heating systems.	Implements green technologies (e.g., LED lighting, electric vehicles) into business processes.	Leads projects that incorporate cutting-edge green technologies to reduce energy consumption.	Directs the development and scaling of green technologies within organizations or industries.	Pioneers green technology innovations, influencing environmental policies and sustainability practices globally.

1.4. Strategies for energy conservation and resource efficiency

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies opportunities for energy saving and supports implementation of resource-efficient practices in structured environments.	Applies strategies for conserving energy and managing resources efficiently in business or project operations.	Leads initiatives for energy conservation, improving resource efficiency across operations.	Oversees energy efficiency programs at an organizational or national scale.	Shapes global policies for energy conservation and resource efficiency, driving sustainable economic growth.
Competency Examples	Identifies areas for energy conservation (e.g., using energy-efficient equipment).	Implements energy-saving practices in daily operations (e.g., using smart meters, improving insulation).	Leads energy conservation programs within an organization, reducing energy consumption and costs.	Develops and oversees national or organizational strategies for energy conservation and resource management.	Defines and leads global energy conservation policies and practices, influencing sustainability initiatives across industries.

Career Progression Pathway for Renewable Energy & Clean Technology

Level	Position Examples	Focus
Entry-Level (L-1)	*Environmental Technician, Renewable Energy Assistant, Sustainability Intern*	Learn the basics of renewable energy systems, energy conservation methods, and how to assist in integrating green technologies into systems.
Mid-Level (L-2)	*Renewable Energy Engineer, Green Technology Specialist, Energy Consultant*	Apply renewable energy technologies (solar, wind, hydro) to systems, projects, and business needs. Design and implement renewable energy solutions.
Senior-Level (L-3)	*Senior Renewable Energy Engineer, Green Technology Director, Sustainability Manager*	Lead large-scale renewable energy projects, focusing on optimization and scalability. Manage integration of green technologies into infrastructures.
Lead-Level (L-4)	*Renewable Energy Project Director, Head of Sustainability, Smart Energy Solutions Leader*	Oversee the integration of renewable energy technologies into national or global energy systems. Lead major sustainability initiatives.

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Expert-Level (L-5)	*Global Renewable Energy Strategist, Principal Sustainability Innovator, Green Technology Thought Leader*	Innovate new renewable energy technologies, shape the global energy transition, and set industry standards through leadership in research and policy development.

Assessment Criteria for Renewable Energy & Clean Technology

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding basic principles of renewable energy systems and assisting in their integration.	– Successful installation of basic renewable energy systems – Completion of foundational renewable energy training – Basic understanding of energy conservation techniques
Mid-Level (L-2)	Application of renewable energy technologies to business projects, energy conservation strategies.	– Successful project implementation of solar, wind, or hydro technologies – Integration of energy-saving technologies (LED lighting, EVs) – Successful energy audits and optimization
Senior-Level (L-3)	Leading large-scale renewable energy projects, optimizing performance and integration across sectors.	– - Successful management of large renewable energy projects (e.g., wind farms, solar parks) – Integration of renewable energy systems into national or organizational infrastructure – Achievement of energy efficiency and sustainability goals
Lead-Level (L-4)	Overseeing and directing large-scale renewable energy and green technology initiatives, influencing policy.	– Development and leadership of large-scale energy systems projects – Directing integration into national grids or public infrastructure – Leadership in global sustainability programs and influencing energy policies
Expert-Level (L-5)	Pioneering new renewable energy technologies, leading global sustainability and energy transition efforts.	– Measurable global impact in renewable energy adoption – Establishment of new industry standards or global policies in renewable energy – Contributions to large-scale international environmental projects

2. Climate Science & Environmental Management

2.1. Principles of environmental science and sustainability

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies core principles of environmental science and sustainability, and explains their implications for project or operational contexts.	Applies environmental science principles to improve practices in organizational planning, operations, and reporting.	Develops and implements sustainability strategies for large organizations.	Leads sustainability initiatives at national or global levels, integrating environmental science into policy frameworks.	Pioneers global sustainability practices, shaping future policies and sustainability trends.
Competency Examples	Identifies environmental risks and basic	Applies sustainability practices in	Leads sustainability initiatives and	Develops and influences national or global	Innovates and shapes the future of

	sustainability principles.	operations and product design.	evaluates their impact on business operations.	sustainability policies and strategies.	sustainability practices globally.

2.2. Strategies for climate change mitigation and adaptation

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Recognizes key risks of climate change and lists basic strategies for mitigation and adaptation in local or organizational settings.	Implements climate adaptation or mitigation strategies in projects, aligning actions with climate policy goals and organizational needs.	Leads large-scale projects for climate change adaptation and mitigation.	Directs national and international climate change strategies and policies.	Shapes global climate change policies and frameworks, pioneering innovative adaptation and mitigation solutions.
Competency Examples	Identifies basic climate change risks and mitigation methods.	Applies climate change adaptation measures to projects and initiatives.	Leads multi-stakeholder initiatives for climate change adaptation and mitigation.	Oversees national or global climate action plans, ensuring alignment with sustainability goals.	Designs and drives global climate change policies, influencing future sustainability practices.

2.3. Climate change risk assessment and management techniques

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies climate-related risks and supports basic assessment tasks under supervision, using pre-defined templates or tools.	Conducts climate risk assessments and interprets findings to inform organizational risk management and sustainability plans..	Leads comprehensive climate risk assessments at large scales (e.g., national, industry-level).	Directs complex climate risk analysis and adaptation strategies for enterprises or governmental bodies.	Pioneers global risk assessment methodologies and frameworks to tackle climate challenges.
Competency Examples	Identifies basic climate-related risks for small projects or operations.	Conducts climate risk assessments for organizational sustainability planning.	Leads climate risk assessment teams and integrates findings into strategic decision-making.	Directs complex national or global climate risk assessments and response strategies.	Innovates and defines global methodologies for climate risk management across industries.

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2.4. Biodiversity conservation and ecosystem protection

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Recognizes key biodiversity and ecosystem concepts and explains the importance of conservation within development or business contexts.	Applies biodiversity conservation strategies in planning or operations to ensure compliance and reduce ecological impacts.	Leads initiatives to conserve biodiversity and manage ecosystems effectively at an organizational or national level.	Oversees large-scale biodiversity conservation projects and integrates ecosystem management strategies into national or international policies.	Shapes global biodiversity and ecosystem policies, driving innovative solutions for ecological preservation.
Competency Examples	Identifies key elements of ecosystems and biodiversity.	Implements biodiversity conservation practices within projects and operations.	Leads biodiversity conservation programs and assesses their impact on ecosystems.	Develops and implements national or global biodiversity and ecosystem management strategies.	Defines global standards for biodiversity conservation and ecosystem management, influencing policies worldwide.

2.5. Environmental impact assessment and management

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports environmental impact assessment (EIA) tasks by gathering relevant data and identifying potential environmental effects.	Conducts basic EIAs and integrates findings into project design or organizational reporting to meet regulatory requirements.	Leads complex environmental impact assessments for large-scale projects or policy initiatives.	Directs comprehensive environmental impact assessments, influencing national or international environmental policy.	Develops and implements global EIA frameworks and guidelines, influencing environmental regulations worldwide.
Competency Examples	Identifies basic environmental impacts and contributes to EIA processes.	Conducts EIAs and reports findings for business projects or organizational sustainability planning.	Leads teams conducting large-scale EIAs for complex projects or regulations.	Directs and oversees national or international EIA frameworks and policies.	Shapes global EIA standards and regulations, driving sustainable development across industries.

Career Progression Pathway for Climate Science & Environmental Management

Level	Position Examples	Focus

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Entry-Level (L-1)	*Environmental Technician, Climate Science Intern, Junior Sustainability Analyst*	Learn the basics of climate science, environmental impact assessments, and green technologies. Assist in the application of environmental management practices and sustainability principles in business and operations.
Mid-Level (L-2)	*Environmental Consultant, Climate Change Analyst, Green Technology Specialist*	Apply climate science principles to design environmental management strategies, conduct climate impact assessments, and develop green technology solutions that reduce carbon footprints.
Senior-Level (L-3)	*Senior Environmental Consultant, Climate Strategy Manager, Sustainability Director*	Lead the implementation of climate adaptation and mitigation strategies at an organizational or governmental level. Oversee large-scale environmental projects and contribute to policy formulation and advocacy for climate change actions.
Lead-Level (L-4)	*Director of Environmental Strategy, Chief Sustainability Officer (CSO), Head of Climate Change Initiatives*	Direct national or global climate change initiatives and sustainability programs, focusing on policy development, resource management, and large-scale environmental restoration projects.
Expert-Level (L-5)	*Global Climate Science Leader, Principal Environmental Strategist, Chief Sustainability Innovator*	Lead global efforts to combat climate change, influencing industry-wide environmental policies and strategies. Shape sustainable practices through innovative research and contribute to large-scale international environmental change initiatives.

Assessment Criteria for Climate Science & Environmental Management

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Ability to assist in environmental projects and understand basic principles of climate science and renewable energy systems.	– Completion of basic environmental science training – Assisting in system setups for renewable energy technologies – Understanding of energy conservation methods
Mid-Level (L-2)	Applying environmental science and integrating green technologies into business practices and projects.	– Successful integration of renewable energy systems in small-scale projects – Development of green technology solutions – Ability to assess environmental impact in business operations
Senior-Level (L-3)	Leading and managing large projects focused on scaling renewable energy systems and implementing sustainability strategies.	– Successful leadership of large-scale environmental projects – Quantifiable improvements in energy efficiency – Cost savings from sustainability projects – Measurable reductions in environmental footprint of operations
Lead-Level (L-4)	Directing and overseeing large-scale green technology projects, developing sustainability strategies across organizations or national infrastructures.	– Leadership in national/international sustainability programs – Successfully managing large multi-disciplinary teams – Reporting and ensuring adherence to global environmental standards – Achieving sustainability goals for large infrastructure projects
Expert-Level (L-5)	Shaping and influencing global environmental policies, leading global sustainability initiatives, and driving large-scale environmental innovations.	– Measurable global impact on environmental policies – Industry-wide adoption of new green technologies – Successful leadership in international environmental conferences or initiatives – Establishment of new sustainability benchmarks or standards

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3. Circular Economy & Resource Sustainability

3.1. Circular economy models for waste reduction and resource efficiency

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies key principles of circular economy and describes basic practices for waste reduction and resource reuse.	Applies circular economy principles to optimize material flows and minimize waste in business or production processes.	Designs and implements waste management strategies based on circular economy models at the organizational level.	Leads large-scale initiatives for circular economy integration and waste reduction across industries.	Pioneers innovative circular economy models, influencing global waste management policies and strategies.
Competency Examples	Identifies different types of waste and basic circular economy practices.	Implements waste reduction and resource reuse strategies within business operations.	Leads projects that integrate circular economy models into supply chains and production systems.	Directs and oversees national or global circular economy strategies, reducing waste across industries.	Develops groundbreaking circular economy models and shapes global waste management policies.

3.2. Strategies for recycling and sustainable resource utilization

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Distinguishes recyclable materials and supports implementation of basic recycling procedures in work settings.	Implements resource management and recycling programs that contribute to operational sustainability.	Leads initiatives to optimize recycling processes and manage resources sustainably at an organizational level.	Oversees and integrates advanced recycling technologies and sustainable resource practices into large-scale operations.	Shapes global strategies for recycling and sustainable resource management, influencing industry standards.
Competency Examples	Identifies types of recyclable materials and basic recycling processes.	Implements resource management and recycling programs in operations.	Leads resource management initiatives, ensuring sustainable use of materials and waste reduction.	Directs large-scale recycling initiatives, integrating sustainability across the entire supply chain.	Innovates and drives global recycling practices, shaping environmental policies and sustainability initiatives.

3.3. Eco-friendly product design and development

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies eco-friendly materials and basic design principles for sustainable products.	Applies sustainable design methods and materials in product development to reduce environmental impact.	Leads product development projects that prioritize sustainability and eco-friendly materials.	Develops and integrates sustainability into product lines across industries, driving environmental innovation.	Shapes the future of sustainable product development, setting global standards for eco-friendly products.
Competency Examples	Identifies eco-friendly materials and design features for products.	Applies sustainable design principles and eco-friendly materials in product development.	Leads teams in designing and producing sustainable products, optimizing lifecycle impacts.	Directs product sustainability strategies across organizations, ensuring eco-friendly practices.	Innovates in sustainable product development, influencing global product design and environmental impact reduction.

3.4. Sustainable supply chain optimization

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Recognizes sustainable supply chain practices such as local sourcing or reduced packaging, and explains their benefits.	Implements sustainable procurement and logistics practices to improve supply chain sustainability.	Leads the design and implementation of sustainable supply chains, focusing on efficiency and eco-friendly practices.	Directs large-scale sustainability programs, integrating sustainable practices across supply chains.	Shapes global supply chain strategies, driving sustainable practices across industries and markets.
Competency Examples	Identifies sustainable supply chain practices (e.g., local sourcing, recycling).	Implements sustainable supply chain management strategies, such as reducing carbon emissions.	Leads teams in the optimization of supply chain sustainability, focusing on reducing environmental impact.	Directs national or global supply chain sustainability efforts, ensuring compliance with environmental standards.	Innovates and drives sustainable supply chain models that influence global markets and policies.

Career Progression Pathway for Circular Economy & Resource Sustainability

Level	Position Examples	Focus
Entry-Level (L-1)	*Eco-Design Assistant, Sustainability Intern, Circular Economy Research Assistant*	Learn the basics of recycling processes, eco-friendly design, and sustainability principles. Assist in the implementation of resource management projects.

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Mid-Level (L-2)	*Resource Efficiency Consultant, Recycling Program Manager, Eco-Product Designer*	Apply sustainability principles to optimize resource use, manage recycling programs, and integrate eco-friendly design practices into product development.
Senior-Level (L-3)	*Senior Resource Efficiency Leader, Sustainable Supply Chain Director, Circular Economy Strategy Manager*	Lead efforts to design and implement sustainable product lines, manage large-scale recycling projects, and improve resource efficiency across operations.
Lead-Level (L-4)	*Global Resource Management Director, Circular Economy Program Leader, Head of Eco-Innovation*	Oversee the development and integration of global strategies for circular economy and sustainability practices across industries.
Expert-Level (L-5)	*Chief Sustainability Officer (CSO), Global Circular Economy Advisor, Sustainability Innovator*	Lead groundbreaking innovations in circular economy practices, drive global change in resource efficiency, and set industry-wide sustainability standards.

Assessment Criteria for Circular Economy & Resource Sustainability

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding of eco-friendly design and recycling processes.	– Successful identification and application of eco-friendly materials – Completion of basic circular economy and recycling training – Participation in resource optimization tasks
Mid-Level (L-2)	Applying sustainability principles in supply chain optimization, product design, and recycling efforts.	– Implementation of successful eco-design principles in products – Development and management of recycling and waste management programs – Measurable improvements in resource efficiency
Senior-Level (L-3)	Leading sustainability initiatives and ensuring resource efficiency across the organization.	– Successful management of circular economy projects that reduce waste and improve resource usage – Creation of sustainable product lines and integrated eco-design strategies – Proven impact on reducing carbon footprint and resource consumption
Lead-Level (L-4)	Overseeing national and global initiatives for resource sustainability and waste management.	– Leadership in driving large-scale sustainability and circular economy projects – Oversight of successful national or global supply chain optimization initiatives – Measurable success in reducing waste and improving resource use efficiency across industries
Expert-Level (L-5)	Leading global efforts to advance circular economy models and sustainability practices.	– Measurable global impact on waste reduction through innovative recycling and resource sustainability projects – Contribution to shaping global policies for circular economy integration – Establishment of industry standards for sustainability practices

4. Sustainable Urban Development

4.1. Design and implementation of green infrastructure in urban settings

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies basic green infrastructure elements and	Applies green infrastructure concepts and smart city	Leads the integration of smart city technologies and sustainable	Oversees large-scale smart city initiatives and green infrastructure	Pioneers the development of innovative smart cities

	supports their inclusion in small-scale urban projects.	technologies in the design and planning of urban projects.	infrastructure into urban planning.	projects at the city or national level.	and green infrastructure solutions, setting global sustainability standards.
Competency Examples	Identifies key components of green infrastructure (e.g., green roofs, permeable surfaces).	Integrates renewable energy sources and energy-efficient systems into urban designs.	Leads the development of smart city technologies, such as IoT systems for urban management.	Directs the design and implementation of smart city systems that optimize energy, mobility, and infrastructure.	Develops and advocates for cutting-edge smart city solutions on a global scale, influencing urban policy and infrastructure strategies.

4.2. Smart cities and sustainable urban development strategies

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Recognizes sustainable building practices and explains how they support environmental and societal goals.	Applies sustainable urban planning and construction principles to reduce the environmental footprint of urban development.	Leads the design and execution of sustainable building projects, ensuring compliance with environmental standards.	Oversees the integration of sustainable practices in large urban development projects and infrastructure.	Shapes global sustainable design policies and strategies, influencing green architecture and construction on an international scale.
Competency Examples	Demonstrates knowledge of sustainable building materials and techniques.	Designs buildings using energy-efficient and low-carbon materials.	Leads teams in developing green-certified buildings and infrastructure.	Directs large-scale sustainable urban development projects, ensuring alignment with green building certifications (e.g., LEED).	Innovates new sustainable design methodologies and contributes to global policy in green urban development.

Career Progression Pathway for Sustainable Urban Development

Level	Position Examples	Focus
Entry-Level (L-1)	*Green Infrastructure Assistant, Sustainable Urban Planning Intern, Junior Urban Designer*	Learn the basics of green infrastructure, smart city concepts, and sustainable urban development practices. Assist in urban development projects focusing on sustainability.
Mid-Level (L-2)	*Urban Sustainability Consultant, Smart City Planner, Green Infrastructure Specialist*	Apply green infrastructure principles and smart city technologies in urban development projects. Design and implement sustainable urban systems that minimize environmental impacts.
Senior-Level (L-3)	*Senior Urban Planner, Smart City Director, Green Infrastructure Manager*	Lead teams and projects focused on integrating smart city technologies and sustainable infrastructure into urban planning. Ensure that projects align with sustainability goals and environmental regulations.

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Lead-Level (L-4)	*Director of Smart Cities, Head of Urban Sustainability, Senior Green Infrastructure Consultant*	Oversee large-scale smart city initiatives, managing urban development projects at the city or national level. Drive the implementation of innovative green infrastructure solutions.
Expert-Level (L-5)	*Global Urban Development Strategist, Principal Smart City Architect, Sustainability Policy Leader*	Lead global initiatives for the development of smart cities and green infrastructure solutions. Shape policies, influence urban planning strategies, and set global sustainability standards.

Assessment Criteria for Sustainable Urban Development

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding of green infrastructure and basic urban sustainability principles.	– Successful identification and application of basic green infrastructure concepts (e.g., green roofs, permeable surfaces). – Completion of training in sustainable urban planning principles.
Mid-Level (L-2)	Application of green infrastructure principles and smart city technologies in urban planning.	– Successful integration of renewable energy sources and energy-efficient systems into urban designs. – Evidence of sustainability-driven urban development projects and designs.
Senior-Level (L-3)	Leading the design and execution of sustainable building projects, ensuring compliance with environmental standards.	– Measurable success in managing projects that integrate green infrastructure and smart city technologies. – Demonstrated leadership in urban planning projects that meet environmental and sustainability standards.
Lead-Level (L-4)	Oversight of large-scale urban development projects and integration of sustainability practices across urban infrastructures.	– Leadership in directing large-scale smart city and green infrastructure projects. – Proven success in managing complex urban sustainability projects with significant environmental and societal impact.
Expert-Level (L-5)	Shaping global strategies for sustainable urban development and green infrastructure solutions.	– Significant contributions to the development and implementation of global urban sustainability policies. – Leadership in setting and influencing global standards for smart city planning and sustainable urban development.

5. Green Policy & Compliance

5.1. Understanding and application of environmental policies and regulations

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies relevant environmental regulations and explains how they apply to basic operational activities.	Applies environmental regulations and ensures project or business compliance through implementation of necessary measures.	Leads teams to ensure environmental regulations are met in corporate strategies and urban projects.	Oversees compliance with environmental policies at the national or global level, influencing public sector strategies.	Shapes international environmental policies, leading global initiatives on sustainability and regulatory frameworks.
Competency Examples	Identifies key environmental regulations (e.g., waste	Ensures compliance with local environmental	Leads regulatory compliance initiatives for sustainability projects in multiple industries.	Directs global compliance efforts and integrates environmental laws	Influences international environmental policies and regulatory

	management, water usage).	laws and standards.		into business strategies.	frameworks on climate change and sustainability.

5.2. Integration of environmental ethics into corporate strategies and decision-making

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies environmental ethical concerns in workplace practices and explains their importance for sustainability.	Applies ethical principles in decision-making and contributes to integrating sustainability into corporate strategies.	Leads the integration of environmental ethics into organizational policies and business practices.	Oversees the development of corporate social responsibility (CSR) strategies with a focus on environmental impact.	Shapes global environmental responsibility frameworks, influencing corporate behavior and ethical standards across industries.
Competency Examples	Identifies ethical concerns in business practices related to the environment.	Integrates ethical considerations into sustainability strategies and business operations.	Leads teams in adopting sustainable and ethical practices in corporate strategies.	Directs global sustainability and CSR initiatives, setting the standard for ethical environmental practices.	Develops global frameworks for environmental ethics, influencing policy and corporate responsibility on an international scale.

Career Progression Pathway for Green Policy & Compliance

Level	Position Examples	Focus
Entry-Level (L-1)	*Environmental Compliance Assistant, Sustainability Intern, Junior Policy Analyst*	Learn the basics of environmental policies, regulations, and ethical considerations in sustainability. Assist in ensuring compliance with local environmental laws and regulations.
Mid-Level (L-2)	*Environmental Compliance Officer, Sustainability Consultant, Policy Advisor*	Apply environmental policies and regulations to business operations. Ensure compliance with environmental laws and integrate sustainability practices into organizational strategies.
Senior-Level (L-3)	*Senior Environmental Policy Advisor, Regulatory Compliance Manager, Sustainability Director*	Lead teams to ensure environmental regulations are met and guide organizations in incorporating environmental policies into corporate strategies.
Lead-Level (L-4)	*Director of Environmental Compliance, Head of Sustainability and Compliance, Policy Leader*	Oversee compliance with environmental policies at the national or global level. Influence public sector strategies and ensure adherence to international sustainability frameworks.
Expert-Level (L-5)	*Global Environmental Policy Leader, Principal Sustainability Consultant, Regulatory Strategy Director*	Shape international environmental policies and regulatory frameworks. Lead global initiatives on sustainability, climate change, and environmental compliance.

Assessment Criteria for Green Policy & Compliance

Level	Assessment Focus	Example Metrics

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Entry-Level (L-1)	Understanding and identifying key environmental policies and regulations.	– Demonstrates basic knowledge of environmental regulations (e.g., waste management, water usage). – Completes environmental compliance training and basic policy identification tasks.
Mid-Level (L-2)	Applying environmental policies and ensuring compliance in business practices.	– Successfully implements local environmental laws and standards in business operations. – Evidence of contribution to the integration of environmental regulations into company processes.
Senior-Level (L-3)	Leading teams to ensure environmental compliance in corporate strategies and projects.	– Leading regulatory compliance initiatives for sustainability projects. – Successfully managing environmental compliance for projects in multiple industries.
Lead-Level (L-4)	Overseeing and managing large-scale compliance efforts and influencing public sector strategies.	– Leadership in directing global compliance efforts. – Integration of environmental laws and policies into international business strategies.
Expert-Level (L-5)	Shaping global environmental policies and leading regulatory initiatives.	– Contributing to international environmental policy frameworks. Leading global initiatives on sustainability and regulatory compliance.

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II. DIGITAL COMPETENCIES FOR THE TWIN GREEN AND DIGITAL TRANSITION

The **Digital Competencies for the Twin Green and Digital Transition** framework focuses on the integration of advanced digital technologies within the context of sustainability and environmental practices. As industries and governments continue to embrace digital transformation, it is essential to ensure that these technologies are leveraged to drive the green transition. This framework equips professionals with the necessary digital expertise to harness the power of digital tools—such as artificial intelligence (AI), big data, the Internet of Things (IoT), and cybersecurity—while promoting sustainable outcomes.

The competencies in this section cover a broad range of digital skills that directly support the twin green and digital transitions. These include expertise in data analytics for environmental monitoring, AI-driven solutions for optimizing energy systems, IoT applications for sustainable resource management, and the cybersecurity measures needed to protect green digital infrastructures. By emphasizing the importance of integrating digital technologies with sustainability objectives, the framework ensures that professionals can not only drive technological innovation but also use it as a tool to achieve environmental sustainability.

This framework prepares professionals to lead digital initiatives that support both the green economy and digitalization. It encourages a deep understanding of how to apply digital solutions to sustainability challenges, such as improving energy efficiency, reducing waste, and enabling smart cities. These digital skills will help organizations meet evolving regulatory requirements, stay competitive in a rapidly changing technological landscape, and make a positive contribution to global sustainability goals. Ultimately, the framework empowers professionals to lead the development of smart, scalable solutions that foster a sustainable future through digital transformation.

6. Data Science, AI & Advanced Analytics for Green Transition

6.1. Proficiency in applying artificial intelligence (AI) to sustainability challenges

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies fundamental AI concepts and explains their potential applications in sustainability, such as energy systems or climate adaptation.	Develops basic AI models (e.g., classification, regression) and applies them to sustainability-related problems like smart city management or energy forecasting.	Design advanced AI systems (e.g., deep learning, NLP) for large-scale environmental projects (e.g., energy efficiency, waste management).	Lead AI strategies and architectures to optimize sustainability goals across enterprises or nations.	Pioneer new AI paradigms for sustainability, shaping global AI research and policy to drive green transformation.
Competency Examples	Recognize basic AI concepts (rule-based systems, simple AI models).	Develop AI models for resource optimization (e.g., energy forecasting).	Lead AI teams to optimize environmental monitoring systems.	Architect scalable AI solutions to optimize resource use in industries.	Lead global AI strategies to drive climate change initiatives and sustainability practices.

6.2. Mastery of machine learning techniques for environmental data analysis

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies and distinguishes basic machine learning algorithms and describes their relevance to environmental problem-solving.	Implements and trains machine learning models using environmental datasets to support tasks such as energy prediction or emission monitoring.	Lead teams to develop machine learning models for large-scale sustainability projects, ensuring model optimization.	Design complex ML architectures and strategies to scale across industries (e.g., smart cities, renewable energy).	Define and push the boundaries of machine learning innovation, focusing on global sustainability impacts and scalable solutions.
Competency Examples	Identify basic ML algorithms for classification and regression problems in environmental data.	Independently build and train ML models for renewable energy forecasting.	Lead machine learning optimization for climate modeling systems.	Architect ML models for large-scale renewable energy networks.	Lead research in ML for climate resilience and develop global ML sustainability frameworks.

6.3. Expertise in big data analysis for optimizing sustainable systems

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Uses basic data tools (e.g., Excel, SQL) to extract and organize environmental datasets for initial analysis.	Cleans, visualizes, and interprets large environmental datasets using tools such as Python, R, or Spark to generate sustainability insights.	Architect big data solutions that support sustainability projects, such as smart grid management.	Lead enterprise-wide data science teams to drive innovation in sustainability, leveraging big data analytics.	Shape global standards for big data in sustainability, influencing policy and guiding industry best practices.
Competency Examples	Use SQL to retrieve basic environmental data.	Visualize data for climate change analysis using Python.	Lead the design of big data platforms for energy optimization.	Oversee the use of big data for large-scale environmental modeling.	Influence global sustainability efforts through big data insights and frameworks.

6.4. Data-driven decision-making for sustainability outcomes

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Follows predefined dashboards and templates to extract insights from environmental data and reports them to relevant stakeholders.	Generates actionable sustainability insights by conducting data analyses and simple A/B tests, supporting evidence-based environmental decision-making.	Lead data-driven decision-making processes using predictive analytics to guide sustainability strategies.	Design and implement data-driven business strategies to optimize sustainability across large organizations.	Drive enterprise-wide and global data-driven decision-making to shape the future of green industries.
Competency Examples	Use pre-built dashboards to interpret sustainability data.	Generate insights from data to optimize resource management.	Lead data science initiatives to optimize energy usage across industries.	Design predictive analytics models to guide green industry strategies.	Shape data-driven sustainability practices on a global scale.

6.5. Integration of AI, IoT, and big data to drive green solutions

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies common use cases where AI, IoT, and big data are integrated to support green solutions such as smart grids or precision agriculture.	Builds and implements models that combine AI, IoT, and big data to address sustainability issues, such as real-time energy optimization or pollution tracking.	Develop integrated AI, IoT, and big data solutions that drive sustainability, such as smart cities and renewable energy networks.	Lead cross-domain sustainability projects that integrate AI, IoT, and big data for large-scale environmental impact.	Innovate sustainable solutions at the intersection of AI, IoT, and big data, shaping the future of global sustainability.
Competency Examples	Identify IoT devices used for environmental data collection.	Implement predictive models for smart grid management.	Lead projects that combine AI, IoT, and big data to optimize energy consumption.	Architect cross-domain AI solutions for sustainable cities.	Lead global projects integrating AI, IoT, and big data to drive environmental sustainability.

6.6. Use of simulation tools for energy system modeling and optimization

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)

EQF Level	EQF 3-4	EQF 5-6	EQF 6-7	EQF 7-8	EQF 7-8
Descriptor	Runs predefined energy simulations and interprets basic outputs for forecasting energy usage or savings in simple systems.	Customizes and applies simulation tools to model energy demand, optimize building performance, and explore resource-saving opportunities.	Design novel energy models and simulations combining digital and physical models to optimize energy usage.	Lead large-scale energy simulation initiatives, optimizing energy systems across industries and communities.	Pioneer future energy simulation technologies, influencing global standards for energy modeling in sustainability.
Competency Examples	Run simulations for simple energy forecasts.	Customize energy simulations for sustainable buildings.	Lead the design of energy optimization models for industrial sectors.	Oversee large-scale energy simulation projects across industries.	Drive global innovations in energy modeling technologies.

6.7. Designing and utilizing digital twin technologies for sustainability

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	EQF 3-4	EQF 5-6	EQF 6-7	EQF 7-8	EQF 7-8
Descriptor	Describes the basic principles of digital twin technologies and identifies their applications in sustainability domains like predictive maintenance.	Integrates IoT data into digital twin systems and uses them to monitor asset performance, predict failures, and improve sustainability outcomes.	Design enterprise-scale digital twins with AI feedback loops for energy systems and smart infrastructure.	Lead the creation of large-scale digital twin ecosystems, driving sustainability through real-time simulations.	Lead the development of metaverse-integrated digital twin systems for global enterprises, advancing sustainability initiatives.
Competency Examples	Explain digital twin applications in predictive maintenance.	Integrate IoT data into digital twin systems for energy efficiency.	Lead digital twin initiatives for smart city infrastructure.	Design enterprise-scale digital twins to optimize energy use.	Lead the global adoption of digital twin technologies for sustainability.

Career Progression Pathway for Data Science, AI & Advanced Analytics for Green Transition

Level	Position Examples	Focus
Entry-Level (L-1)	*AI Research Assistant, Junior Data Scientist, Sustainability Data Intern*	Learn the fundamentals of AI, machine learning, and sustainability applications. Assist in data collection and analysis for environmental projects.
Mid-Level (L-2)	*Data Scientist, AI Model Developer, Sustainability Data Analyst*	Develop and apply AI models for sustainability (e.g., energy optimization, climate change). Optimize existing systems using AI and machine learning for green solutions.
Senior-Level (L-3)	*Senior AI Data Scientist, Environmental Data Strategist, Lead AI Engineer*	Design and implement AI systems for large-scale environmental projects. Lead data science teams focused on optimizing sustainability efforts across industries.

Lead-Level (L-4)	*Director of AI and Sustainability, Chief Data Officer (CDO), Head of Environmental AI*	Oversee the integration of AI and data science across organizations and industries for sustainability. Architect solutions that drive environmental impact.
Expert-Level (L-5)	*Principal Data Scientist, Global AI Sustainability Leader, Chief Innovation Officer*	Lead global initiatives using AI, machine learning, and big data for climate change and sustainability. Innovate and shape global policies for sustainable data practices.

Assessment Criteria for Data Science, AI & Advanced Analytics for Green Transition

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Ability to assist in applying AI models, machine learning techniques, and data analysis for sustainability.	– Assists in the data collection and analysis for sustainability projects. – Contributes to basic AI model development.
Mid-Level (L-2)	Proficiency in developing AI models, applying machine learning techniques to sustainability challenges.	– Successfully develops AI models for energy forecasting or climate change applications. – Demonstrates the ability to optimize AI systems for sustainability.
Senior-Level (L-3)	Leading AI and machine learning projects, managing data teams, and driving sustainability through AI-driven decisions.	– Leads teams to deliver large-scale AI models. – Applies advanced machine learning techniques to environmental data.
Lead-Level (L-4)	Architecting AI strategies for large-scale impact, integrating AI into organizational operations for sustainability.	– Oversees AI integration across multiple business units. – Drives sustainability using AI solutions at a national or global scale.
Expert-Level (L-5)	Shaping global AI strategies for sustainability, influencing policies, and leading the development of new AI paradigms.	– Leads international AI sustainability initiatives. – Publishes high-impact research and influences global AI sustainability policies.

7. Cybersecurity, Ethics & Digital Governance for Green Transition

7.1. Managing digital risks and cybersecurity for green technologies

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies common digital risks (e.g., phishing, malware) and applies basic cybersecurity measures to protect green technology systems.	Implements security controls and conducts vulnerability assessments to manage cybersecurity risks in sustainable energy and smart systems.	Design and manage enterprise cybersecurity architectures, ensuring the protection of green technology infrastructures.	Lead and oversee national or global cybersecurity strategies, focusing on green infrastructure and resilience.	Shape global cybersecurity policies, influencing sustainability in digital infrastructure and promoting environmental resilience.
Competency Examples	Recognize basic cyber threats (e.g., phishing, malware) in green tech systems.	Perform vulnerability assessments and implement basic cybersecurity	Lead the design of cybersecurity frameworks for large-scale smart city infrastructures.	Oversee cybersecurity initiatives for nation-level green energy projects.	Influence global cybersecurity standards and frameworks, integrating green

		measures for renewable energy networks.			technologies for energy optimization.

7.2. Ensuring ethical AI practices for sustainability applications

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies ethical issues in AI applications (e.g., bias, fairness) and explains their impact on green technology deployment.	Implements ethical safeguards in AI systems to ensure responsible use of data and fair outcomes in sustainability-related applications.	Develop governance frameworks for responsible AI use in large-scale environmental projects, ensuring compliance with ethical standards.	Lead AI ethics initiatives in large organizations, ensuring that AI systems support sustainable practices.	Shape global AI ethical policies, influencing the adoption of responsible AI for sustainability on a national and international scale.
Competency Examples	Recognize bias in AI models used in green technologies.	Implement ethical AI safeguards, ensuring data privacy and sustainability in green energy systems.	Lead governance initiatives to ensure AI in smart cities supports green transitions responsibly.	Shape AI ethics frameworks for the integration of AI in green tech solutions.	Provide global leadership in the ethical deployment of AI systems in sustainable technologies.

7.3. Implementing information security and privacy measures for green tech

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Recognizes basic data protection principles (e.g., GDPR) and assists in applying them within green technology projects.	Conducts privacy impact assessments and implements information security measures for environmental data in IoT and smart systems.	Develop and enforce organizational data governance and privacy compliance strategies, ensuring that sustainability-related data is protected.	Lead privacy governance strategies at the enterprise level, aligning privacy regulations with sustainability goals.	Influence global data privacy policies and frameworks, ensuring alignment with green tech and sustainability standards.
Competency Examples	Map data flows in green tech systems, ensuring compliance with privacy regulations.	Conduct privacy assessments for IoT devices used in environmental monitoring.	Lead the creation of data governance strategies for smart cities, ensuring privacy protection.	Oversee privacy and security frameworks for enterprise-level sustainable technologies.	Advocate for international data protection standards that prioritize environmental sustainability.

7.4. Developing and managing e-government solutions for sustainable urban management

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies e-government services relevant to sustainability and assists in their use and basic digital interface support.	Implements secure and accessible digital solutions to deliver public sustainability services in urban environments.	Architect smart city platforms and e-government solutions, ensuring their security and sustainability.	Lead large-scale digital government and smart city initiatives, integrating green technologies for sustainable urban management.	Influence global policies on digital government and smart cities, advocating for the integration of sustainability goals.
Competency Examples	Understand basic e-government services related to sustainability (e.g., renewable energy permits).	Implement secure digital solutions for green tech services.	Lead the design of smart city infrastructures, integrating green technologies.	Oversee nation-wide digital transformation projects in sustainable urban planning.	Shape global policies for smart cities that prioritize sustainability and environmental resilience.

7.5. Overseeing IT governance and information systems for environmental projects

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Performs basic IT support tasks to ensure operational stability in sustainability-focused systems (e.g., renewable energy dashboards).	Administers cloud and network systems while ensuring security, reliability, and energy efficiency in environmental technology environments.	Design and manage resilient IT infrastructures, ensuring the integration of green technologies into enterprise systems.	Lead large-scale IT management initiatives for sustainable operations, ensuring IT systems align with environmental goals.	Influence the development of global IT systems that integrate sustainability principles and green technologies.
Competency Examples	Perform routine IT system checks for renewable energy networks.	Administer cloud-based systems for environmental monitoring projects.	Lead IT infrastructure design for sustainable energy solutions.	Oversee enterprise-level IT systems for smart grids and renewable energy projects.	Shape global IT strategies to optimize sustainability and green tech solutions.

Career Progression Pathway for Cybersecurity, Ethics & Digital Governance for Green Transition

Level	Position Examples	Focus

Entry-Level (L-1)	*Cybersecurity Assistant, Junior Digital Ethics Analyst, IT Support Intern*	Support implementation of basic cybersecurity and ethical AI practices for green technologies. Understand digital risks and privacy basics.
Mid-Level (L-2)	*Cybersecurity Specialist, Digital Ethics Officer, Privacy Compliance Analyst*	Apply cybersecurity protocols and data privacy practices in green infrastructure. Implement ethical frameworks for AI systems in sustainability.
Senior-Level (L-3)	*Information Security Manager, AI Ethics Strategist, E-Governance Architect*	Lead teams to develop secure digital systems and privacy strategies in smart cities and environmental technologies.
Lead-Level (L-4)	*Chief Information Security Officer, Director of Digital Governance, Head of Sustainable IT*	Oversee national or organizational cybersecurity and privacy governance for green systems. Lead smart city and e-government projects.
Expert-Level (L-5)	*Global Digital Ethics Leader, Sustainability Tech Policy Advisor, Principal Cybersecurity Strategist*	Shape international standards and policies for digital ethics, security, and governance in green transitions.

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understand and apply basic cybersecurity and ethical AI practices in sustainability contexts.	– Identifies risks in digital environments. – Assists in implementing basic data privacy and ethical AI safeguards.
Mid-Level (L-2)	Implement and manage cybersecurity, privacy, and ethical AI frameworks for green systems.	– Conducts vulnerability assessments. – Manages compliance with privacy regulations in sustainability projects.
Senior-Level (L-3)	Lead digital governance teams and design secure, ethical systems for sustainable infrastructure.	– Leads e-government initiatives. – Designs privacy protocols for smart cities and green technologies.
Lead-Level (L-4)	Direct large-scale cybersecurity and ethical governance initiatives aligned with green transition.	– Oversees national IT strategies for sustainability. – Leads smart city digital infrastructure deployments.
Expert-Level (L-5)	Influence global digital ethics and IT governance frameworks supporting environmental goals.	– Shapes international standards. – Advises global sustainability agencies on IT security and ethics.

8. Cloud, IoT & Smart Technologies for Green Transition

8.1. Managing cloud computing platforms for sustainable digital solutions

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Use basic cloud services for data storage and applications in green tech environments.	Deploy and manage cloud infrastructure, ensuring optimization for green technologies.	Architect multi-cloud solutions for sustainable energy systems and smart cities.	Lead the design of cloud strategies that integrate green technologies and promote carbon reduction.	Shape global cloud strategies with a focus on sustainability and driving digital green transitions.
Competency Examples	Use cloud services like AWS or Azure for simple tasks such as file storage.	Manage cloud infrastructure for renewable energy projects.	Design multi-cloud architectures for sustainable smart city initiatives.	Lead cloud transformation strategies for energy-efficient smart grids.	Innovate cloud solutions that contribute to the global sustainability agenda.

8.2. Virtual system and cloud infrastructure management in green tech

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Monitors virtual systems and performs basic maintenance of cloud infrastructure for green applications.	Implement Infrastructure-as-Code (IaC) and configure CI/CD pipelines for green tech environments.	Design and implement resilient cloud systems that support sustainable practices in large organizations.	Oversee enterprise-wide cloud management strategies, ensuring compliance with environmental standards and green tech initiatives.	Lead global cloud governance strategies, integrating carbon-aware cloud workloads and driving digital sustainability.
Competency Examples	Monitor and maintain cloud-based systems for sustainability applications (e.g., solar energy management).	Develop and deploy IaC for renewable energy platforms.	Design cloud governance frameworks for sustainable infrastructure management.	Lead the implementation of green cloud strategies across large-scale organizations.	Champion the global adoption of carbon-efficient cloud solutions and technologies.

8.3. Developing IoT solutions for energy optimization and smart cities

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Assists in setting up IoT devices and sensors for collecting environmental data in smart city or energy systems.	Develops and deploys IoT solutions that improve energy efficiency and resource optimization in urban settings.	Design IoT ecosystems for smart cities and sustainable urban infrastructure.	Lead large-scale smart technology projects that integrate IoT solutions into urban planning and sustainability efforts.	Innovate IoT solutions that support global sustainability goals, shaping smart city infrastructure worldwide.
Competency Examples	Identify IoT components and assist in setting up energy-efficient sensors.	Develop IoT-based systems for managing water or energy resources in urban environments.	Lead IoT projects for the integration of smart grids and waste management systems in cities.	Oversee the deployment of large-scale IoT solutions that drive sustainability and efficiency in urban centers.	Shape the future of smart cities with IoT systems designed for long-term environmental impact and sustainability.

8.4. Applying blockchain technology to sustainability tracking and systems

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**

Descriptor	Describes how blockchain can be applied in sustainability (e.g., tracking emissions or energy flows).	Develops blockchain-based applications and smart contracts for tracking energy use or verifying carbon credits.	Design and implement blockchain solutions for sustainable supply chains and carbon credits.	Lead blockchain innovation in sustainability, implementing decentralized systems for renewable energy tracking and trading.	Shape global blockchain policies and frameworks that support environmental sustainability and promote green decentralized finance.
Competency Examples	Track cryptocurrency transactions and understand proof-of-work mechanisms.	Build blockchain applications for energy-efficient resource management.	Design and implement blockchain systems for carbon footprint tracking in global supply chains.	Lead blockchain projects for integrating sustainable finance with decentralized energy grids.	Advocate for the use of blockchain in achieving global sustainability goals through green decentralized finance systems.

8.5. Utilizing virtual reality (VR) and augmented reality (AR) for environmental training and simulation

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Operates basic VR/AR systems and supports their use in sustainability training scenarios.	Designs and develops VR/AR applications for training in energy efficiency, waste management, or urban sustainability.	Design immersive VR/AR systems for simulating smart city environments and green infrastructure.	Lead the development of large-scale VR/AR projects to transform industries with sustainable practices and eco-friendly technologies.	Shape the future of VR/AR technology to drive global sustainability efforts through virtual transformations in green tech.
Competency Examples	Operate basic VR training systems for environmental monitoring.	Develop AR applications for maintaining renewable energy systems.	Lead the design of immersive simulations for sustainable urban planning and green energy initiatives.	Oversee global VR/AR strategies for implementing green technology training and solutions.	Shape global VR/AR applications that drive eco-conscious innovation across industries.

Career Progression Pathway for Cloud, IoT & Smart Technologies for Green Transition

Level	Position Examples	Focus
Entry-Level (L-1)	*Cloud Intern, IoT Technician, Junior Smart Technology Assistant*	Learn the basics of cloud computing, IoT systems, and their applications in green technologies.
Mid-Level (L-2)	*Cloud Engineer, IoT Developer, Sustainability Tech Specialist*	Apply cloud solutions and IoT technologies in green tech projects. Manage smart city and energy systems.
Senior-Level (L-3)	*Senior Cloud Architect, IoT Systems Manager, Smart Tech Project Lead*	Design and implement scalable smart technology solutions for large-scale sustainability projects.

Lead-Level (L-4)	*Director of Cloud Solutions, Head of IoT and Smart Technology, Smart City Initiative Leader*	Lead enterprise-wide cloud and IoT strategies. Oversee sustainability projects using advanced smart technologies.
Expert-Level (L-5)	*Global Cloud Strategy Leader, Principal IoT Innovator, Chief Smart Technology Officer*	Shape global strategies for cloud and IoT adoption in sustainability projects. Influence global green transition initiatives.

Assessment Criteria for Cloud, IoT & Smart Technologies for Green Transition

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding and applying basic cloud and IoT concepts.	– Demonstrates basic knowledge of cloud platforms (AWS, Azure) and IoT devices for sustainability projects.
Mid-Level (L-2)	Implementing cloud-based systems and IoT solutions for sustainability.	– Successful deployment of cloud solutions for green tech projects. – Demonstrated expertise in integrating IoT devices for resource optimization.
Senior-Level (L-3)	Designing and scaling cloud and IoT solutions for large sustainability projects.	– Leading the design of scalable cloud infrastructures for smart cities and energy management. – Successful management of IoT systems for large-scale projects.
Lead-Level (L-4)	Overseeing global cloud and IoT strategies, ensuring compliance with sustainability goals.	– Directing global cloud strategies for green energy and smart city solutions. – Successfully managing multi-country IoT deployments for energy efficiency.
Expert-Level (L-5)	Shaping global cloud, IoT, and smart tech strategies for green transition.	– Leading thought leadership and global strategies for the integration of cloud and IoT in green transitions. – Contributing to policy frameworks for sustainable smart technologies.

9. Software engineering & digital design for green transition

9.1. Developing software solutions for sustainable systems

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Writes basic scripts or code to support data management or automation in green technology applications.	Develops software solutions that support sustainability, such as energy monitoring platforms or carbon calculators.	Design scalable software systems for environmental data collection and analysis.	Lead the development of software platforms that integrate sustainability goals into business operations.	Innovate software engineering practices to drive the green transition, shaping the future of eco-friendly software solutions.
Competency Examples	Write simple scripts for environmental data management.	Develop energy-efficient software applications.	Architect software systems for environmental monitoring and reporting.	Lead software development projects focused on renewable energy data platforms.	Shape industry standards for software engineering practices that drive

					sustainability in green tech.

9.2. Building advanced applications and programming for green tech integration

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Solves programming problems and supports software development in sustainability projects (e.g., resource tracking apps).	Builds scalable applications using advanced programming techniques to support green tech integration.	Design and implement high-performance applications for large-scale sustainability initiatives.	Lead teams in developing advanced software solutions that support green industries, such as renewable energy or sustainable agriculture.	Pioneering new programming paradigms that enable the future of sustainable technologies and eco-friendly innovation.
Competency Examples	Solve basic algorithmic problems for sustainability data.	Build scalable applications for energy optimization in smart cities.	Lead the design of real-time data analysis platforms for environmental monitoring.	Oversee the development of high-impact software solutions in sustainable industries.	Innovate in the integration of AI and software programming to enhance sustainability and green practices.

9.3. Designing user interfaces (UI) and user experiences (UX) for sustainable technologies

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Creates simple wireframes and prototypes for sustainability-related digital applications (e.g., energy tracking dashboards).	Designs interactive, user-centered interfaces that enhance usability of digital solutions supporting sustainable practices.	Lead the creation of user-centered designs for platforms supporting sustainable business practices.	Drive the development of UX strategies that promote sustainable behaviors through technology interfaces.	Shape the global standards for UI/UX design that prioritize sustainability and eco-friendly user interactions.
Competency Examples	Design basic wireframes for environmental apps (e.g., carbon footprint trackers).	Build interactive prototypes for smart home energy management systems.	Lead the design of sustainable tech solutions with a focus on user-centric green applications.	Create enterprise-level UX strategies for energy-efficient product platforms.	Innovate UX practices that encourage sustainability through intuitive digital interfaces.

9.4. Leading digital engineering and platform adoption for sustainability goals

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports platform setup and onboarding for energy and sustainability management tools.	Implements digital platforms that support sustainability objectives across business functions and operations.	Lead platform adoption projects that integrate sustainable practices into business operations.	Drive large-scale platform adoption for sustainable industries, including renewable energy and smart agriculture.	Influence the global shift toward sustainable digital platforms and lead the adoption of green technologies across industries.
Competency Examples	Set up basic digital platforms for energy management.	Implement IoT-based platforms for waste management in smart cities.	Lead the deployment of sustainable platforms in manufacturing sectors.	Oversee the transformation of industry platforms toward sustainability and environmental goals.	Shape the global strategy for green digital platforms and industry-wide technology adoption.

9.5. Implementing automation and robotics for sustainability-driven operations

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Assists in configuring and maintaining robotic tools for green processes such as recycling or monitoring.	Programs robotic systems and automates processes that improve energy efficiency and environmental outcomes.	Lead the design and implementation of automation systems that optimize green technologies.	Direct the development of autonomous systems that drive efficiency in renewable energy and sustainable manufacturing.	Lead global innovations in robotics and automation for sustainability and environmental impact reduction.
Competency Examples	Assemble and test robotic kits for environmental monitoring.	Program robots to perform energy-saving tasks in industrial settings.	Design robotic systems for automating waste sorting and recycling processes.	Lead the development of autonomous robots for energy efficiency in smart grids.	Pioneer robotics technologies that contribute to the global sustainability agenda and green tech innovations.

Career Progression Pathway for Software Engineering & Digital Design for Green Transition

Level	Position Examples	Focus

Entry-Level (L-1)	*Software Engineer Intern, Junior Sustainability Developer, UI/UX Designer Intern*	Learn the basics of software development, digital design, and their applications in sustainability.
Mid-Level (L-2)	*Software Developer, Sustainability Software Engineer, UX/UI Designer*	Develop software solutions and user experiences that optimize sustainability outcomes.
Senior-Level (L-3)	*Senior Software Engineer, Senior UX Designer, Sustainability Tech Lead*	Design scalable software systems and lead teams working on sustainability-driven projects.
Lead-Level (L-4)	*Lead Software Architect, Head of Digital Sustainability Solutions, Director of UX/UI for Green Tech*	Lead software engineering and digital design strategies for large-scale sustainability initiatives.
Expert-Level (L-5)	*Principal Software Engineer, Global Sustainability Tech Leader, Chief UX Strategist for Green Tech*	Shape industry standards and global strategies for software engineering and digital design to drive the green transition.

Assessment Criteria for Software Engineering & Digital Design for Green Transition

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding and applying basic programming and design concepts to sustainability.	– Demonstrates basic proficiency in programming (e.g., Python, Java) for environmental applications. – Completion of entry-level projects such as creating simple environmental data management tools or basic UI designs.
Mid-Level (L-2)	Developing and optimizing software solutions for sustainability applications.	– Successful deployment of energy-efficient software applications. – Evidence of implementing green tech software features such as energy consumption optimization.
Senior-Level (L-3)	Designing scalable software systems for large sustainability projects and leading teams.	– Leadership in designing and architecting software systems for sustainability, such as smart grids or energy management platforms. – Measured success in optimizing software for environmental monitoring and reporting.
Lead-Level (L-4)	Leading digital design and software solutions for sustainability, integrating sustainability goals into business operations.	– Overseeing large-scale sustainability platform projects. – Successfully integrating green technology solutions into enterprise-level software and digital systems.
Expert-Level (L-5)	Shaping global software engineering and digital design standards for green transition.	– Leading global digital sustainability projects. – Establishing industry-wide best practices for sustainability-focused software engineering and user design.

10. Digital Transformation & Literacy for Green Transition

10.1. Enhancing digital literacy for sustainability professionals

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Uses digital tools (e.g., word processors, spreadsheets, cloud tools) to support basic tasks in sustainability projects.	Applies digital tools to enhance sustainability outcomes, such as using dashboards, modeling tools, and	Leads digital upskilling programs focused on sustainability and green technologies.	Designs and implements comprehensive digital literacy programs for organizational transformation in green industries.	Guides national or global strategies for digital literacy development in the context of sustainable

		communication platforms.			development goals.
Competency Examples	Use basic digital tools like office apps, email, and cloud services for personal and organizational tasks.	Select and apply tools like energy management software or data visualization tools to support green goals.	Lead training initiatives to enhance digital literacy across teams focused on sustainability and energy efficiency.	Develop digital transformation strategies that include environmental sustainability goals, integrating digital literacy across all levels of the organization.	Shape policies for global digital literacy, ensuring it aligns with sustainability and green development standards.

10.2. Cultivating digital culture to support sustainable business practices

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Recognizes the influence of digital culture on behavior and identifies its role in shaping sustainability mindsets.	Promotes ethical and sustainability-oriented digital practices within teams and organizational routines.	Shapes organizational culture strategies that align digital practices with sustainability goals.	Leads large-scale cultural transformation efforts that integrate digital ethics and green technologies.	Influences global policies and trends regarding the intersection of digital culture, sustainability, and humanities.
Competency Examples	Demonstrates awareness of digital ethics (e.g., privacy, data security) and its relevance to sustainability.	Analyze the societal impact of digital technology on sustainable development and environmental consciousness.	Develop and implement strategies for fostering a sustainable digital culture within organizations.	Lead organizational transformations that align digital culture with sustainability and green transition goals.	Shape national and international digital culture policies, ensuring the integration of ethical and sustainable practices in digital innovations.

10.3. Leading digital transformation efforts in business to align with sustainability objectives

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Understands the purpose of digital transformation and supports initial steps in adopting new digital tools in sustainability projects.	Leads small-scale digital transformation projects that enhance sustainability performance and organizational efficiency.	Manages enterprise-wide digital transformation efforts, aligning them with organizational sustainability goals.	Directs large-scale digital transformation programs that drive innovation in green and digital sectors.	Shapes the future of digital transformation globally, driving industry-wide adoption of green technologies and sustainability frameworks.

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Competency Examples	Understands the basics of digital transformation and how it impacts business operations.	Lead projects that digitize business processes and enhance operational sustainability.	Oversee and manage large-scale digital transformation initiatives that reduce the environmental footprint of businesses.	Lead complex digital transformation programs across organizations, integrating green technologies and digital tools to drive innovation.	Influence global industries and policies regarding digital transformation and sustainability, creating frameworks that drive business success through green technology and digital tools.

Career Progression Pathway for Digital Transformation & Literacy for Green Transition

Level	Position Examples	Focus
Entry-Level (L-1)	*Digital Literacy Assistant, Green Tech Intern, Sustainability Support*	Develop basic digital skills for everyday tasks and learn the use of digital tools for green initiatives.
Mid-Level (L-2)	*Digital Transformation Consultant, Sustainability Technology Specialist, Policy Advisor*	Apply digital tools to optimize processes and improve sustainability efforts.
Senior-Level (L-3)	*Senior Digital Transformation Manager, Green Technology Director, Digital Sustainability Lead*	Lead digital upskilling programs focused on sustainability and green technologies.
Lead-Level (L-4)	*Director of Digital Transformation, Head of Sustainability Tech, Policy Leader*	Design and implement comprehensive digital literacy programs for organizational transformation in green industries.
Expert-Level (L-5)	*Global Digital Literacy Strategist, Principal Sustainability Consultant, Policy Advisor for Sustainability*	Guide national or global strategies for digital literacy development in the context of sustainable development goals.

Assessment Criteria for Digital Transformation & Literacy for Green Transition

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding and applying basic digital tools for sustainability.	– Demonstrates proficiency in using basic digital tools (e.g., office apps, email, cloud services). – Completion of training in basic sustainability-focused digital tools.
Mid-Level (L-2)	Developing and applying digital tools to optimize sustainability efforts.	– Successfully implements digital tools (e.g., energy management software, data visualization tools) in business operations. – Evidence of contributions to sustainability-focused digital projects.
Senior-Level (L-3)	Leading digital upskilling programs and digital transformations for sustainability.	– Leading and designing digital transformation initiatives that integrate sustainability. – Evidence of successful digital literacy training programs for employees or teams.
Lead-Level (L-4)	Designing and implementing digital strategies for sustainable business practices.	– Successfully implementing large-scale digital strategies that integrate sustainability goals. – Leading significant change in organizational digital culture towards sustainability.
Expert-Level (L-5)	Shaping global digital literacy strategies for sustainability.	– Leading the development and implementation of national or global digital literacy strategies for sustainable development.

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		– Contributing to shaping global policies on digital transformation and sustainability.

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III. BUSINESS COMPETENCIES FOR THE TWIN GREEN AND DIGITAL TRANSITION

The **Business Competencies for the Twin Green and Digital Transition** framework focuses on the integration of both green and digital transformation strategies into business practices. As the world faces the dual challenge of fostering sustainable development while driving digital innovation, it is critical that business leaders possess the necessary skills to manage and drive these changes effectively. This framework aims to equip professionals with the business acumen and leadership capabilities required to lead organizations through the twin green and digital transitions, ensuring that sustainability and digitalization work in tandem to create long-term, scalable solutions.

The competencies in this section cover a broad spectrum of business skills, ranging from sustainable business practices and ethical governance to entrepreneurial innovation and strategic decision-making. It emphasizes the importance of business leaders being equipped with the right tools to navigate the evolving landscape, making informed decisions that align business objectives with green and digital goals. The competency framework also highlights the significance of stakeholder engagement, resource management, and collaboration across sectors to drive successful sustainability and digital transformation initiatives.

This framework prepares professionals to not only understand the principles of sustainable business practices but also to lead the development and implementation of business models that can thrive in both green and digital economies. These skills will help businesses stay competitive in the evolving marketplace, meet regulatory requirements, and make meaningful contributions to global sustainability goals.

11. Sustainable Business Practices

11.1 Integrating sustainability principles into daily business operations

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Applies basic sustainability principles in everyday work tasks and supports operational practices that reduce environmental impact.	Implements sustainability-focused improvements in operational workflows, procurement, and supply chain processes.	Lead the integration of sustainability in business operations and strategy.	Ensure sustainability is embedded across the company's operations, guiding strategic decisions.	Set global standards for sustainability in business operations, shaping industry best practices.
Competency Examples	Apply basic environmental policies in daily operations.	Develop sustainable operational frameworks for various departments.	Optimize operational processes to reduce environmental impact.	Drive cross-functional integration of sustainability across operations.	Influence global sustainability practices in business operations.

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11.2 Leading ethical governance and corporate leadership for sustainability

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies ethical principles in business and recognizes the role of governance in sustainability.	Applies corporate governance practices that promote ethical behavior and support sustainability objectives.	Lead corporate governance strategies that support sustainable and ethical business practices.	Ensure ethical leadership and governance at a global scale, driving sustainability-focused decisions.	Define and lead global governance frameworks for sustainability, influencing industry norms.
Competency Examples	Implement basic ethical practices in daily business operations.	Develop and apply corporate governance models with a focus on sustainability.	Lead organizational shifts towards more sustainable and ethical corporate governance.	Guide ethical decision-making processes at a global level, prioritizing sustainability.	Establish global corporate governance standards for sustainability and ethical leadership.

11.3 Developing and implementing long-term sustainability strategies for businesses

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports sustainability initiatives by applying basic concepts to departmental tasks or projects.	Develops sustainability strategies within specific departments, ensuring alignment with environmental and business goals.	Lead the creation of company-wide sustainability strategies aligned with business goals.	Oversee the implementation of comprehensive sustainability strategies across all business units.	Shape and influence global sustainability strategies, ensuring widespread adoption across industries.
Competency Examples	Apply basic sustainability principles to business activities.	Design and implement sustainability programs within specific business functions.	Lead cross-functional teams to develop long-term sustainability strategies.	Oversee the execution of global sustainability strategies for the entire organization.	Establish industry-leading sustainability strategies that influence global standards.

11.4 Measuring and reporting sustainability performance with actionable insights

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Tracks simple sustainability indicators and	Implements tools and processes to	Develop comprehensive sustainability reporting	Lead global reporting strategies on sustainability	Set global standards for sustainability

	enters relevant data for reporting purposes.	monitor, evaluate, and report sustainability performance in business areas.	frameworks for the organization.	performance and impact.	reporting, shaping transparency across industries.
Competency Examples	Track simple sustainability metrics in daily operations.	Implement reporting systems for tracking sustainability KPIs.	Lead the creation of integrated sustainability reporting across business functions.	Oversee the company's global sustainability reporting practices.	Influence global sustainability reporting standards and transparency across industries.

11.5 Designing sustainable finance and investment strategies for green projects

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Assists in identifying and gathering data on sustainable finance instruments and green project opportunities.	Develops investment plans and financial models that prioritize sustainability in business and project contexts.	Lead sustainable finance initiatives and integrate sustainability into investment strategies.	Drive organizational and industry-wide adoption of sustainable finance and investment practices.	Shape global policies on sustainable finance, leading large-scale investments for sustainability.
Competency Examples	Assist in identifying sustainable finance opportunities.	Develop investment strategies that focus on sustainability outcomes.	Lead investments in projects that contribute to long-term environmental and social value.	Influence and lead large-scale sustainable finance initiatives on a global scale.	Set global standards for sustainable investment strategies and financing models.

11.6 Marketing and promoting sustainable products and services in competitive markets

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports promotional activities for eco-friendly products by preparing content and engaging target audiences.	Designs and executes marketing campaigns that emphasize sustainability and environmental responsibility.	Lead marketing strategies for promoting sustainability-focused products and services.	Oversee company-wide marketing efforts, ensuring all products and services align with sustainability goals.	Set global standards for sustainable marketing practices and lead the transition to green marketing.
Competency Examples	Assist in marketing	Develop campaigns that	Lead the marketing efforts for	Oversee the alignment of all	Influence the global

	sustainable products in local markets.	promote environmentally friendly products.	sustainability-driven products on a global scale.	marketing campaigns with sustainability objectives.	marketing industry to adopt sustainable product promotion standards.

11.7 Managing corporate social responsibility (CSR) and engaging stakeholders in sustainability initiatives

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Participates in CSR initiatives and communicates basic sustainability messages to internal and external stakeholders.	Implements CSR strategies in selected areas and engages stakeholders in activities that support environmental and social goals.	Lead the development of CSR programs that support community and environmental sustainability.	Drive large-scale CSR initiatives with measurable impacts on sustainability.	Shape global CSR strategies and engage stakeholders to lead sustainability in business practices.
Competency Examples	Assist in organizing CSR activities for local communities.	Design and implement CSR programs within specific business areas.	Lead the organization's CSR programs to maximize sustainability impacts.	Oversee the implementation of CSR strategies at a global level, ensuring social and environmental responsibility.	Lead global CSR efforts, influencing industry-wide practices for sustainability.

Career Progression Pathway for Sustainable Business Practices

Level	Position Examples	Focus
Entry-Level (L-1)	*Sustainability Intern, Eco-Design Assistant, Junior Sustainability Analyst*	Learn the basics of sustainability principles, eco-friendly practices, and assist in implementing business operations with a focus on sustainability.
Mid-Level (L-2)	*Sustainability Consultant, Resource Efficiency Specialist, Product Sustainability Designer*	Apply sustainability principles in operations, design, and management to optimize resources, reduce waste, and create eco-friendly products.
Senior-Level (L-3)	*Sustainability Director, Corporate Social Responsibility (CSR) Manager, Sustainable Supply Chain Manager*	Lead the implementation of sustainability strategies and guide organizations in achieving resource efficiency and sustainable business practices.
Lead-Level (L-4)	*Head of Sustainability, Senior Sustainability Consultant, Global CSR Leader*	Oversee the development and execution of global sustainability and circular economy strategies, shaping company-wide policies and practices.
Expert-Level (L-5)	*Chief Sustainability Officer (CSO), Global Sustainability Advisor, Senior Consultant for Green Innovation*	Lead groundbreaking initiatives and global strategies for sustainability, promoting industry-wide practices for sustainable development.

Assessment Criteria for Sustainable Business Practices

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding the basic sustainability concepts and their application in business.	– Demonstrates basic knowledge of sustainability principles and eco-friendly practices.

		– Participation in sustainability awareness programs and eco-design initiatives.
Mid-Level (L-2)	Applying sustainability practices in business operations, product design, and resource management.	– Successfully contributes to designing sustainable products or solutions. – Evidence of managing resource optimization or recycling projects within the organization.
Senior-Level (L-3)	Leading sustainability initiatives and guiding businesses in sustainability strategy.	– Successfully led sustainability projects that reduced waste and improved resource usage. – Proven impact on incorporating sustainability goals into operational strategies and business models.
Lead-Level (L-4)	Overseeing global sustainability strategies and driving sustainable business transformation.	– Leadership in implementing cross-functional sustainability initiatives with measurable impact. – Strategic integration of sustainability into company-wide business plans and policies.
Expert-Level (L-5)	Shaping global sustainability strategies and leading the integration of sustainability in business practices worldwide.	– Leading global initiatives for sustainability, influencing policy frameworks, and industry-wide best practices. – Establishing standards for global sustainability practices and driving large-scale change.

12. Business Innovation and Entrepreneurship

12.1. Creating innovative business models that foster economic growth

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies basic elements of green and digital business models and applies them in simulated or entry-level work tasks.	Designs and applies sustainable business models to support green and digital initiatives within specific business units.	Lead the creation and integration of innovative business models that drive green and digital growth.	Drive the adoption of new, scalable business models across sectors, ensuring alignment with green and digital transitions.	Shape global business model standards that integrate green and digital transformation for sustainable economic growth.
Competency Examples	Apply basic sustainable practices in business activities.	Develop sustainable business models for specific business units.	Lead business transformation with innovative sustainability models.	Oversee the integration of business models that prioritize sustainable economic growth.	Influence global business trends with sustainable and innovative business models.

12.2. Driving strategic entrepreneurship to support green and digital transitions

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Assists in identifying entrepreneu	Develops entrepreneuri al strategies	Lead the design and implementation of entrepreneurial ventures	Drive strategic entrepreneurship at a global scale to	Shape global entrepreneurial ecosystems that

	rial opportunities linked to sustainability and digital innovation.	and launches initiatives in green and digital contexts.	that support green and digital transitions.	foster innovation in green and digital sectors.	prioritize green and digital transformation.
Competency Examples	Assist in identifying business opportunities in the green and digital sectors.	Develop and launch entrepreneurial initiatives in green and digital industries.	Lead entrepreneurial projects that advance green and digital transformation.	Oversee global entrepreneurship programs that promote green and digital innovations.	Influence global policy and trends to create an entrepreneurial ecosystem that fosters green and digital growth.

12.3. Identifying and creating sustainable value propositions for businesses

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Recognizes components of sustainable value creation in business contexts.	Creates value propositions that integrate green and digital aspects into business offerings.	Lead the creation of sustainable value propositions across multiple business areas.	Drive the development of business models that create long-term value through sustainability.	Lead global efforts to create sustainable value propositions at an industry level.
Competency Examples	Assist in identifying opportunities for value creation through green and digital transitions.	Develop value propositions that prioritize sustainability, digitalization, and innovation.	Lead the development of business models that integrate sustainability and digital transformation as key value drivers.	Oversee the integration of green and digital value propositions across all company products and services.	Influence the global business landscape by creating value propositions that shape both green and digital industries.

12.4. Exploring new markets for green and digital products and services

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports market research and collects data on opportunities for green and digital products.	Develops strategies to position and launch green and digital products in new markets.	Lead market entry strategies for green and digital products or services.	Drive market expansion and adoption of green and digital products at a global scale.	Shape global market dynamics for green and digital products, leading industry-wide adoption.

Competency Examples	Assist in researching market opportunities for green and digital products.	Develop go-to-market strategies for green and digital product lines.	Lead market research and expansion for sustainable and digital product offerings.	Oversee global market development strategies for products driven by both green and digital transitions.	Influence global market trends to foster widespread adoption of green and digital products and services.

12.5. Securing financing and scaling sustainable ventures within green and digital sectors

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies sources of funding and assists in basic financial planning for green ventures.	Develops financial strategies and supports investment acquisition for green and digital startups.	Lead the scaling process of green and digital startups by securing investments and managing growth.	Oversee large-scale funding and scaling of sustainable ventures in green and digital sectors.	Shape global financing structures for green and digital ventures, driving industry-wide investment in sustainability and digital transformation.
Competency Examples	Assist in identifying funding opportunities for green businesses.	Develop strategies to secure financing for green and digital ventures.	Lead fundraising efforts for sustainable startups in green and digital sectors.	Oversee global investment strategies for scaling sustainable and digital ventures.	Influence global investment trends and policies to foster financing for green and digital startups.

Career Progression Pathway for Business Innovation and Entrepreneurship

Level	Position Examples	Focus
Entry-Level (L-1)	*Business Innovation Intern, Junior Entrepreneur, Green Tech Assistant*	Learn the basics of business models, entrepreneurship in the green and digital sectors, and assist in the application of sustainable business practices.
Mid-Level (L-2)	*Sustainability Consultant, Digital Transformation Manager, Eco-Product Designer*	Apply entrepreneurial strategies to develop innovative business models that integrate sustainability and digital technologies.
Senior-Level (L-3)	*Senior Business Strategist, Sustainability Director, Green Tech Entrepreneur*	Lead teams in creating scalable and sustainable business models, driving green and digital transformation, and leading innovation in sustainability.
Lead-Level (L-4)	*Head of Business Innovation, Chief Sustainability Officer (CSO), Digital Innovation Leader*	Oversee and guide the development of global business strategies, ensuring alignment with green and digital transitions, fostering large-scale industry-wide impact.
Expert-Level (L-5)	*Global Business Innovation Leader, Principal Entrepreneur in Green Tech, Sustainability Visionary*	Shape industry-wide innovation by leading transformative business models for sustainability and green technologies, influencing global markets and shaping policy.

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Assessment Criteria for Business Innovation and Entrepreneurship

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding basic business models and the principles of sustainability and entrepreneurship.	– Demonstrates basic knowledge of sustainable business principles and digital transformation. – Completion of introductory courses on business innovation and sustainability.
Mid-Level (L-2)	Applying green and digital business principles to real-world projects and driving initial entrepreneurial efforts.	– Developed and applied innovative business models in sustainability projects. – Evidence of successful implementation of green and digital business solutions in product or service development.
Senior-Level (L-3)	Leading strategic entrepreneurial initiatives to scale sustainable business models across sectors.	– Successfully led the design and implementation of business models that integrate green and digital transitions. – Proven impact on business outcomes through sustainability-driven entrepreneurial strategies.
Lead-Level (L-4)	Overseeing global business transformation, driving scalable innovations, and influencing industry-wide change.	– Leadership in driving large-scale, sustainable business transformations. – Successful scaling of green and digital business models across multiple industries.
Expert-Level (L-5)	Leading global initiatives that set new standards in sustainable business practices and digital entrepreneurship.	– Measurable impact on global sustainability and green business trends. – Established industry benchmarks for green and digital business models.

13. Leadership and Decision-Making

13.1. Leading sustainability-driven transformations across organizations

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports leadership teams in implementing sustainability-focused activities.	Leads small-scale transformation efforts that align operations with sustainability goals.	Lead sustainability-driven transformations within specific departments or business units.	Oversee large-scale sustainability-driven transformations across the organization.	Set global leadership standards for driving sustainability transformations across industries.
Competency Examples	Support team leaders in sustainability-focused tasks.	Lead sustainability initiatives within business operations.	Drive sustainability transformations within business divisions.	Manage organization-wide sustainability efforts, ensuring alignment with corporate goals.	Shape global leadership frameworks for sustainability and transformation.

13.2. Making strategic decisions to align business goals with green and digital transitions

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies green and	Participates in strategic	Lead the strategic decision-making	Ensure that all strategic decisions	Lead global strategic

	digital factors influencing basic business decisions.	decision-making processes that support green and digital transitions.	process to integrate sustainability into business objectives.	align with green and digital transition goals at the organizational level.	decision-making processes that drive green and digital transitions across industries.
Competency Examples	Assist in identifying sustainable decision-making opportunities.	Contribute to decision-making for business strategies focusing on sustainability.	Lead decision-making processes to align business operations with sustainability goals.	Oversee high-level decisions ensuring alignment with the green and digital transitions.	Set global standards for strategic decision-making in sustainability and digital transitions.

13.3. Managing risks in environmental and digital shifts for sustainable growth

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Identifies risks in small sustainability or digital projects and reports them.	Implements basic risk management plans in sustainability and digital contexts.	Lead risk management initiatives within sustainability and digital projects.	Oversee enterprise-wide risk management strategies for environmental and digital challenges.	Influence global risk management frameworks for environmental and digital transitions.
Competency Examples	Assist in identifying potential risks in sustainability-focused projects.	Implement risk management strategies for sustainability and digital projects.	Lead risk assessments for sustainability and digital initiatives.	Oversee enterprise-wide risk management strategies in sustainability and digital transformations.	Develop global risk management frameworks for green and digital transitions.

13.4. Solving complex sustainability and digital challenges with advanced problem-solving skills

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Applies structured techniques to solve simple sustainability-related problems.	Solves moderately complex challenges using structured problem-solving frameworks.	Lead the resolution of complex problems in sustainability and digital sectors.	Drive large-scale problem-solving efforts that address systemic challenges in sustainability and digital transitions.	Shape global frameworks for problem-solving in complex sustainability and digital challenges.
Competency Examples	Assist in solving basic sustainability challenges.	Implement solutions for digital and sustainability-	Lead problem-solving initiatives for large-scale sustainability and digital projects.	Oversee the resolution of complex issues	Set global standards for advanced problem-

		related problems.		related to green and digital transitions.	solving methodologies in sustainability and digital sectors.

Career Progression Pathway for Leadership and Decision-Making

Level	Position Examples	Focus
Entry-Level (L-1)	*Sustainability Coordinator, Junior Project Manager, Environmental Assistant*	Learn the basics of leadership and sustainability. Assist in driving small-scale sustainability initiatives and supporting team leaders in sustainability tasks.
Mid-Level (L-2)	*Sustainability Manager, Project Leader, Strategic Decision-Maker*	Apply leadership skills to drive small-scale sustainability initiatives and contribute to decision-making processes aligning with green and digital transitions.
Senior-Level (L-3)	*Senior Sustainability Director, Sustainability Strategist, Risk Manager*	Lead sustainability-driven transformations within specific departments or business units, and manage risk in sustainability and digital projects.
Lead-Level (L-4)	*Global Sustainability Leader, Director of Strategy, Senior Project Executive*	Oversee large-scale sustainability-driven transformations across the organization and ensure alignment with business goals in the green and digital transitions.
Expert-Level (L-5)	*Chief Sustainability Officer (CSO), Global Strategy Director, Principal Sustainability Leader*	Shape global leadership frameworks and influence strategic decision-making processes in sustainability and digital transitions across industries.

Assessment Criteria for Leadership and Decision-Making

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding basic leadership principles and sustainability practices.	– Successful support in sustainability-focused tasks. – Completion of introductory sustainability leadership training.
Mid-Level (L-2)	Contributing to leadership and decision-making processes aligned with green and digital transitions.	– Successful contribution to sustainable decision-making. – Evidence of leadership in small sustainability initiatives.
Senior-Level (L-3)	Leading sustainability transformations and managing risks in environmental and digital shifts.	– Successful leadership of sustainability initiatives within departments. – Demonstrated risk management in green and digital transitions.
Lead-Level (L-4)	Overseeing large-scale leadership efforts and ensuring decisions align with sustainability goals.	– Successful management of organization-wide sustainability efforts. – High-level decision-making with alignment to green and digital strategies.
Expert-Level (L-5)	Shaping global leadership standards and influencing sustainability practices across industries.	– Global influence in sustainability leadership frameworks. – Pioneering strategies for global green and digital transitions.

14. Collaboration and Stakeholder Engagement

14.1. Facilitating cross-functional teamwork for collaborative sustainability efforts

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Participates in sustainability	Facilitates collaboration among team	Lead cross-functional teams to collaborate on	Oversee the alignment of cross-functional teams to	Set global standards for facilitating

	teams and shares insights across functions.	members from different functions to solve sustainability-related challenges.	large-scale sustainability initiatives.	integrate sustainability across all business units.	cross-functional teamwork in sustainability and green transitions.
Competency Examples	Assist in coordinating teamwork activities for sustainability projects.	Facilitate team collaboration for sustainability-focused initiatives.	Lead cross-functional teams to develop sustainable solutions.	Ensure that all departments are working collaboratively toward common sustainability goals.	Influence global collaboration strategies for sustainability across industries.

14.2. Promoting interdisciplinary collaboration to advance sustainability goals

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Engages with diverse professionals and contributes insights on sustainability.	Coordinates interdisciplinary efforts to advance sustainability within and beyond the organization.	Lead interdisciplinary initiatives to integrate sustainability into business practices.	Drive cross-sector collaboration to align with sustainability and green transitions.	Shape global interdisciplinary collaboration frameworks to advance sustainability goals across sectors.
Competency Examples	Assist in supporting interdisciplinary team efforts for sustainability.	Coordinate efforts across teams to advance sustainability projects.	Lead cross-sector collaborations to create large-scale sustainability initiatives.	Oversee industry-wide collaborations to align sustainability practices across sectors.	Influence global policies and strategies that encourage interdisciplinary collaboration for sustainability.

14.3. Engaging key stakeholders to support green and digital transition initiatives

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports stakeholder communication efforts in green and digital projects.	Develops stakeholder engagement strategies for green and digital initiatives.	Lead the engagement of key stakeholders in supporting green and digital transitions.	Oversee stakeholder engagement strategies for large-scale sustainability and digital projects.	Influence global stakeholder engagement frameworks for green and digital transitions across industries.
Competency Examples	Support the coordination of stakeholder activities in	Develop stakeholder engagement plans for sustainability	Lead the engagement of key stakeholders in green transition initiatives.	Oversee the creation and implementation of stakeholder engagement	Lead global initiatives to engage stakeholders in large-scale

	sustainability initiatives.	and digital projects.		strategies for green and digital projects.	sustainability and digital transformation efforts.

14.4. Communicating effectively with stakeholders on sustainability-related matters

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Prepares basic communication materials to inform stakeholders about sustainability efforts.	Crafts targeted messages and supports communication campaigns on sustainability issues.	Lead the communication efforts to inform stakeholders about sustainability initiatives.	Oversee global communication strategies that influence stakeholder actions in sustainability transitions.	Set global standards for communicating sustainability to stakeholders, shaping industry practices.
Competency Examples	Assist in preparing communication materials on sustainability for stakeholders.	Develop and implement communication plans for engaging stakeholders in sustainability topics.	Lead communication campaigns to raise awareness about sustainability within the organization and with external stakeholders.	Oversee and ensure consistent messaging on sustainability-related matters across global operations.	Influence global communication strategies to enhance stakeholder engagement on sustainability issues.

Career Progression Pathway for Collaboration and Stakeholder Engagement

Level	Position Examples	Focus
Entry-Level (L-1)	*Sustainability Assistant, Junior Stakeholder Engagement Officer*	Learn the basics of teamwork and collaboration in sustainability contexts. Assist in supporting team efforts for sustainability initiatives.
Mid-Level (L-2)	*Collaboration Specialist, Stakeholder Engagement Coordinator*	Facilitate cross-functional teams and develop strategies for stakeholder engagement in sustainability and green projects.
Senior-Level (L-3)	*Senior Collaboration Leader, Sustainability Engagement Manager*	Lead cross-functional and interdisciplinary teams for large-scale sustainability initiatives and manage key stakeholder engagement efforts.
Lead-Level (L-4)	*Head of Stakeholder Engagement, Director of Sustainability Strategy*	Oversee the integration of sustainability practices across business units, managing global stakeholder engagement strategies.
Expert-Level (L-5)	*Global Sustainability Leader, Principal Stakeholder Engagement Advisor*	Shape global collaboration strategies and stakeholder engagement frameworks to advance green and digital transitions across industries.

Assessment Criteria for Collaboration and Stakeholder Engagement

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding of basic stakeholder engagement and teamwork.	– Successful support of cross-functional teams for sustainability projects. – Completion of introductory stakeholder engagement training.
Mid-Level (L-2)	Facilitating stakeholder engagement strategies and cross-functional teamwork.	– Successfully facilitated teamwork in sustainability initiatives.

		– Evidence of developing stakeholder engagement plans for projects.
Senior-Level (L-3)	Leading cross-functional and interdisciplinary teams for sustainability efforts.	– Leadership in sustainability-focused cross-functional collaborations. – Successfully engaging key stakeholders in green transition projects.
Lead-Level (L-4)	Overseeing large-scale sustainability transformations through collaboration.	– Oversight of global stakeholder engagement strategies. – Leadership in aligning organizational goals with sustainability through effective communication and collaboration.
Expert-Level (L-5)	Shaping global collaboration frameworks and influencing industry-wide stakeholder engagement.	– Contributing to the development of global collaboration strategies for sustainability. – Pioneering global stakeholder engagement practices that foster green and digital transitions.

15. Project and Program Management

15.1 Applying project and program management principles to green and digital transformations

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports the planning and execution of green/digital project tasks.	Applies project management methodologies to deliver green and digital initiatives.	Lead sustainability and digital transformation projects, applying advanced project management principles.	Oversee multiple projects focused on sustainability and digital transitions, ensuring successful outcomes.	Drive global project and program management strategies that support industry-wide green and digital transformations.
Competency Examples	Assist in managing small-scale sustainability projects.	Apply project management principles to green and digital projects.	Lead projects that drive digital and green transformation.	Manage large-scale projects with a focus on green and digital transitions.	Set global standards for project management practices in green and digital transformations.

15.2 Strategically planning and executing sustainability-focused projects

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Participates in project planning and tracks sustainability project progress.	Develops plans and manages sustainability projects across business units.	Lead the planning and execution of sustainability-focused projects across multiple business functions.	Oversee the strategic planning and execution of high-impact sustainability projects on a global scale.	Shape global strategic planning frameworks for sustainability-focused projects, driving innovation and transformation.
Competency Examples	Assist in the execution of	Develop and implement	Lead large-scale sustainability projects,	Oversee and direct the execution of	Define and influence

	small sustainability projects.	plans for sustainability projects.	ensuring successful execution.	global sustainability projects.	strategic planning for sustainability projects across industries.

15.3 Managing stakeholder relationships in the context of green and digital transitions

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Assists in stakeholder coordination and tracks feedback for project teams.	Develops and implements stakeholder engagement plans in transformation projects.	Lead stakeholder engagement efforts for projects focused on green and digital transitions.	Oversee stakeholder management strategies across multiple green and digital projects.	Shape global stakeholder management frameworks for large-scale green and digital transitions.
Competency Examples	Assist in engaging stakeholders for small projects.	Develop stakeholder management strategies for green and digital initiatives.	Lead engagement and collaboration with stakeholders on large-scale projects.	Oversee stakeholder management for high-profile green and digital projects.	Influence global policies for stakeholder management in green and digital transitions.

15.4 Allocating resources and budgeting for sustainable project outcomes

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports budgeting tasks and resource allocation for sustainability projects.	Prepares and manages budgets for green and digital project portfolios.	Lead resource management efforts to ensure sustainable outcomes in projects.	Oversee large-scale resource allocation and budgeting for multiple sustainability-focused projects.	Shape global resource allocation frameworks for sustainability and digital projects, ensuring long-term impact.
Competency Examples	Assist in the allocation of resources for small green and digital projects.	Develop budgets and resource plans for sustainability initiatives.	Lead resource management strategies to ensure sustainability in project execution.	Oversee global resource allocation and budgeting for sustainability and digital transitions.	Set global standards for resource allocation in sustainability and digital projects.

15.5 Monitoring, evaluating, and reporting on sustainability-related projects

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**

Descriptor	Collects data and supports evaluation efforts in green projects.	Develops indicators and manages reporting on sustainability project performance.	Lead the development of monitoring, evaluation, and reporting frameworks for sustainability projects.	Oversee the monitoring and evaluation of global sustainability projects, ensuring accurate reporting.	Shape global standards for monitoring and evaluation in sustainability-related projects.
Competency Examples	Assist in tracking and reporting basic sustainability metrics.	Develop and implement systems to monitor sustainability project outcomes.	Lead the creation of comprehensive sustainability project reports.	Oversee the evaluation and reporting of sustainability project impacts on a global scale.	Set global standards for monitoring and evaluating sustainability projects, ensuring transparency.

15.6 Using agile and traditional project management methodologies to ensure sustainable outcomes

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Supports project delivery using agile or traditional methods for green initiatives.	Applies agile and traditional frameworks to deliver sustainability-focused projects effectively.	Lead the application of agile and traditional methodologies in large-scale sustainability and digital transformation projects.	Oversee the use of project management methodologies across multiple sustainability projects to ensure effective execution.	Influence the adoption of agile and traditional project management methodologies for sustainable outcomes at a global level.
Competency Examples	Assist in implementing basic project management methodologies for sustainability projects.	Develop and apply agile and traditional project management approaches for sustainability initiatives.	Lead the application of agile and traditional project management in large sustainability projects.	Oversee the use of agile and traditional project management in large-scale sustainability and digital transformation projects.	Set global standards for agile and traditional project management methodologies in sustainability and digital sectors.

Career Progression Pathway for Project and Program Management

Level	Position Examples	Focus
Entry-Level (L-1)	*Project Assistant, Junior Project Coordinator, Sustainability Intern*	Learn the basic principles of project and program management in green and digital transitions. Assist in small-scale sustainability projects.
Mid-Level (L-2)	*Project Manager, Program Coordinator, Sustainability Program Leader*	Apply project and program management principles to support green and digital transition projects. Lead small-scale projects and initiatives.
Senior-Level (L-3)	*Senior Project Manager, Sustainability Program Manager, Digital Transformation Leader*	Lead sustainability and digital transformation projects, applying advanced project management principles. Oversee cross-functional teams.

Lead-Level (L-4)	*Director of Sustainability Projects, Head of Green Transition Programs, Senior Program Director*	Oversee multiple projects focused on sustainability and digital transitions, ensuring successful outcomes across business units.
Expert-Level (L-5)	*Global Project Management Leader, Principal Sustainability Strategist, Chief Digital Transformation Officer*	Drive global project and program management strategies that support industry-wide green and digital transformations. Set standards for best practices.

Assessment Criteria for Project and Program Management

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding basic project and program management in sustainability contexts.	– Demonstrates basic understanding of project management principles. – Successfully supports small-scale sustainability projects.
Mid-Level (L-2)	Applying project management principles to green and digital projects.	– Successfully manages small projects. – Evidence of applying project management methodologies to sustainability and digital projects.
Senior-Level (L-3)	Leading large-scale sustainability and digital transformation projects.	– Successfully leads cross-functional teams. – Achieves key project milestones and delivers sustainable outcomes.
Lead-Level (L-4)	Overseeing multiple sustainability and digital projects to ensure successful outcomes.	– Manages multiple projects with a focus on sustainability and digital transitions. – Delivers high-impact projects within time and budget constraints.
Expert-Level (L-5)	Setting global project management strategies to support industry-wide transformations.	– Leads large-scale projects with global impact. – Establishes industry standards for project management methodologies in sustainability.

16. Personal Development and Continuous Learning

16.1. Pursuing lifelong learning and upskilling for adaptability in green and digital environments

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Participates in training activities to build green and digital skills.	Proactively seeks upskilling opportunities and encourages peers to adopt learning mindsets.	Lead and support continuous learning initiatives within the organization, ensuring alignment with green and digital goals.	Drive organizational learning strategies to ensure all employees are equipped to manage green and digital transformations.	Shape global learning frameworks that foster continuous upskilling for green and digital transitions.
Competency Examples	Engage in basic learning opportunities related to green and digital skills.	Pursue certifications and training to enhance green and digital knowledge.	Lead teams in identifying and implementing relevant learning initiatives for green and digital growth.	Oversee organization-wide upskilling programs for green and digital readiness.	Influence global standards for lifelong learning and upskilling in green and digital fields.

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16.2. Effectively managing time within sustainability-driven and digital projects

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Organizes own time and tasks to meet deadlines in green and digital projects.	Manages team schedules and project timelines to meet sustainability objectives.	Lead time management strategies for large-scale green and digital projects, optimizing resources and outcomes.	Oversee time management across multiple green and digital projects to ensure timely delivery.	Set global time management standards for green and digital projects, ensuring efficiency and effectiveness.
Competency Examples	Support time management for small sustainability projects.	Implement time management practices to ensure successful project completion.	Lead the strategic use of time management in large-scale green and digital projects.	Oversee and ensure timely execution of multiple high-priority green and digital initiatives.	Influence global practices for time management in green and digital transitions.

16.3. Developing resilience and adaptability to navigate sustainability and digital challenges

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**
Descriptor	Responds flexibly to changes in project demands or priorities.	Adapts workflows and supports teams during transitions in sustainability and digital contexts.	Lead teams through complex sustainability and digital challenges, fostering resilience and adaptability.	Oversee organization-wide efforts to build resilience and adaptability in navigating green and digital transformations.	Shape global strategies to build resilience and adaptability for green and digital challenges.
Competency Examples	Support team members in adapting to changes in sustainability projects.	Develop strategies to ensure project teams remain adaptable in changing digital and green environments.	Lead teams through transitions by fostering resilience during green and digital challenges.	Oversee large-scale initiatives to build organizational resilience in response to green and digital disruptions.	Influence global policies and frameworks to increase resilience and adaptability in the face of global green and digital challenges.

16.4. Cultivating emotional intelligence and leadership competencies for supporting sustainable leadership

Sub-Level Competencies	L-1 (Associate)	L-2 (Professional)	L-3 (Senior Professional/Manager)	L-4 (Lead Professional/Senior Manager)	L-5 (Principal)
EQF Level	**EQF 3-4**	**EQF 5-6**	**EQF 6-7**	**EQF 7-8**	**EQF 7-8**

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Descriptor	Demonstrates empathy and self-awareness in team settings.	Applies emotional intelligence to manage teams and support collaborative leadership in sustainability projects.	Lead teams with emotional intelligence to foster a culture of sustainable leadership and adaptability.	Oversee organizational leadership development programs, integrating emotional intelligence with sustainability and digital leadership.	Shape global leadership development frameworks that prioritize emotional intelligence for sustainable leadership across industries.
Competency Examples	Assist in team interactions, applying basic emotional intelligence principles.	Lead teams with an emphasis on emotional intelligence to improve project outcomes.	Use emotional intelligence to foster collaboration and leadership in sustainability-focused projects.	Oversee leadership development programs that cultivate emotional intelligence in sustainability and digital transformations.	Set global leadership standards that incorporate emotional intelligence and sustainable leadership practices.

Career Progression Pathway for Personal Development and Continuous Learning

Level	Position Examples	Focus
Entry-Level (L-1)	*Learning & Development Assistant, Junior Sustainability Consultant, Personal Development Intern*	Understand the importance of continuous learning for adapting to green and digital environments. Engage in basic learning opportunities related to green and digital skills.
Mid-Level (L-2)	*Training Specialist, Sustainability Learning Manager, Professional Development Coordinator*	Actively pursue learning opportunities to stay current with green and digital transitions. Pursue certifications and training to enhance green and digital knowledge.
Senior-Level (L-3)	*Learning & Development Leader, Senior Sustainability Consultant, Manager of Organizational Development*	Lead and support continuous learning initiatives within the organization, ensuring alignment with green and digital goals. Lead teams in identifying and implementing relevant learning initiatives.
Lead-Level (L-4)	*Head of Learning & Development, Director of Sustainability Training Programs, Senior Learning Strategist*	Drive organizational learning strategies to ensure all employees are equipped to manage green and digital transformations. Oversee organization-wide upskilling programs.
Expert-Level (L-5)	*Global Learning Strategist, Principal Development Consultant, Chief Transformation Officer*	Shape global learning frameworks that foster continuous upskilling for green and digital transitions. Influence global standards for lifelong learning and upskilling in green and digital fields.

Assessment Criteria for Personal Development and Continuous Learning

Level	Assessment Focus	Example Metrics
Entry-Level (L-1)	Understanding the basics of continuous learning for green and digital environments.	– Demonstrates an understanding of continuous learning principles. – Actively participates in learning opportunities related to sustainability.
Mid-Level (L-2)	Actively pursuing learning opportunities to stay current with green and digital transitions.	– Achieves certifications or completed relevant courses. – Applies new knowledge to sustainability projects.
Senior-Level (L-3)	Leading continuous learning initiatives to support organizational growth in green and digital fields.	– Leads teams in upskilling for green and digital readiness. – Implements learning initiatives aligned with organizational goals.

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Lead-Level (L-4)	Driving organizational learning strategies to ensure readiness for green and digital transitions.	– Oversees large-scale upskilling programs. Aligns training initiatives with company-wide strategic goals.
Expert-Level (L-5)	Shaping global learning frameworks for green and digital transitions.	– Shapes global standards for upskilling in green and digital fields. – Influences international learning strategies and policies.

3. WAYS FORWARD

The **Competency Framework for the Twin Green and Digital Transition** is designed not merely as a descriptive model but as a practical and adaptable tool to catalyze transformation across education, workforce development, public policy, and innovation systems. Its long-term value will be determined by the extent to which it is **adopted, institutionalized, and adapted** by key actors—ranging from educators and employers to policymakers and learners.
To unlock its full potential, the framework must be operationalized in **real-world institutional and economic contexts**. The following strategic directions outline concrete pathways for leveraging the framework across systems and sectors.

3.1 Embedding the Framework in Education and Training

The framework provides a **structured reference model** for formal, non-formal, and informal learning contexts. Education and training institutions across general, vocational, higher, and adult education can use the framework to:

- Redesign curricula and qualifications to reflect evolving green and digital competency demands;
- Develop modular programmes and micro-credentials aligned with EQF levels, ensuring flexible learning pathways;
- Promote learner-centered, project-based, and interdisciplinary pedagogies that foster applied knowledge and real-world problem solving;
- Define learning outcomes and assessment criteria for each level (L1–L5), enabling consistency in evaluation and certification.

In addition, initial teacher education and professional development for educators can use the framework to strengthen instructional capacity in delivering transition-relevant content and competences.

3.2 Supporting Workforce Development and Talent Planning

Employers, HR professionals, and industry networks can apply the framework to enhance strategic workforce planning and capacity-building. Specific uses include:

- Mapping current employee skillsets against future green and digital transition needs;
- Designing internal training and leadership programmes focused on upskilling and reskilling;
- Embedding competencies into job descriptions, recruitment processes, and performance evaluation systems;
- Supporting career development through digital credentials, competency-based promotion pathways, and talent tracking tools.

The framework can act as a benchmark for organizational learning ecosystems, aligning talent strategies with ESG and innovation agendas.

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3.3 Aligning with Public Policy and Qualification Standards

Policymakers at national, regional, and EU levels may integrate the framework into:

- National skills strategies, recovery plans, and twin transition roadmaps;
- Education and training reforms, including updates to national qualification frameworks (NQFs) and sectoral standards;
- ESG policies and regulatory initiatives that promote sustainability, innovation, and inclusion;
- Public investment programmes targeting green industrialization, innovation ecosystems, and social cohesion.

Its EQF alignment makes the framework interoperable with existing European recognition systems, supporting the validation of prior learning and cross-border mobility of learners and workers.

3.4 Enabling Institutional Transformation

Beyond individual competence development, the framework supports institutional innovation and organizational transformation. It can be used to:

- Inform institutional development strategies in universities, corporate academies, and training providers;
- Enhance quality assurance, accreditation systems, and curriculum modernization initiatives;
- Support the co-creation of knowledge and skills through university–industry–government partnerships;
- Guide the design and implementation of Career Support Centers, living labs, and transition-focused learning spaces.

This enables organizations to act not only as providers of learning but as engines of sustainable and digital transformation.

4.5 Fostering Ecosystem Collaboration and Knowledge Sharing

The framework encourages multi-stakeholder collaboration and continuous learning through:

- The creation of communities of practice and regional learning alliances;
- Cross-border cooperation on mutual benchmarking, standardization, and policy experimentation;
- Platforms for open-access tools, training content, user guidelines, and digital assessment systems;
- Shared initiatives involving learners, educators, researchers, employers, and policymakers co-creating future-ready learning ecosystems.

Collaborative governance and horizontal alignment will be key to ensuring system-level impact.

5.6 Ensuring Flexibility, Inclusion, and Lifelong Learning

For the framework to be transformative, it must remain flexible, inclusive, and learner-centered. This includes:

- Tailoring implementation approaches to the needs of youth, adult learners, and vulnerable populations;
- Integrating equity, gender balance, and territorial cohesion principles into design and delivery;
- Embedding the framework into lifelong learning systems, allowing individuals to acquire, upgrade, and validate their skills throughout life.

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This adaptability is essential to ensuring no one is left behind in the twin green and digital transitions.

4. CONCLUSION

The **Competency Framework for the Twin Green and Digital Transition** offers a **future-oriented, systemic** approach to equipping individuals, organizations, and institutions with the skills, knowledge, and ethical orientation necessary to lead in an era defined by ecological urgency and digital acceleration.

By integrating the green, digital, and business dimensions of transformation into a single, coherent model, the framework provides a comprehensive yet flexible structure for capacity-building at all levels—from foundational learning to strategic leadership.

It defines 72 transition-relevant competencies across 16 competency areas, grouped into three sub-frameworks (Green, Digital, Business), and structured across five progressive levels (L1–L5) aligned with the European Qualifications Framework (EQF). This architecture supports:

- **Continuous professional development** and career mobility;
- **Curriculum reform and innovation** in education and training;
- **Strategic workforce planning** and transition readiness;
- **Policy integration and systemic alignment** with EU and global goals.

The framework emerges at a pivotal moment when sustainability and digitalization are no longer parallel challenges but interdependent forces of structural change. It responds to a clear demand from industry, education, and policy for tools that bridge competence gaps, guide reform, and accelerate implementation.

As industries transform under the pressures of decarbonization, technological innovation, and regulatory change, and as societies confront the risks of climate instability, inequality, and digital exclusion, this framework positions itself as a strategic enabler of resilience, inclusion, and competitiveness.

Its value lies not only in the quality of its structure but in its **usability**:

- **Educators** can align learning outcomes with real-world transition demands;
- **Employers** can design future-proof talent strategies;
- **Policymakers** can operationalize skills agendas within green and digital policy frameworks;
- **Learners** can take ownership of their development through transparent, flexible, and stackable learning pathways.

Above all, the framework affirms that competence development is not a passive process—it is a collective, strategic, and ethical act that underpins our ability to build sustainable, just, and digitally inclusive futures.

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