



CEDEFOP

European Centre for the Development of Vocational Training



European Commission

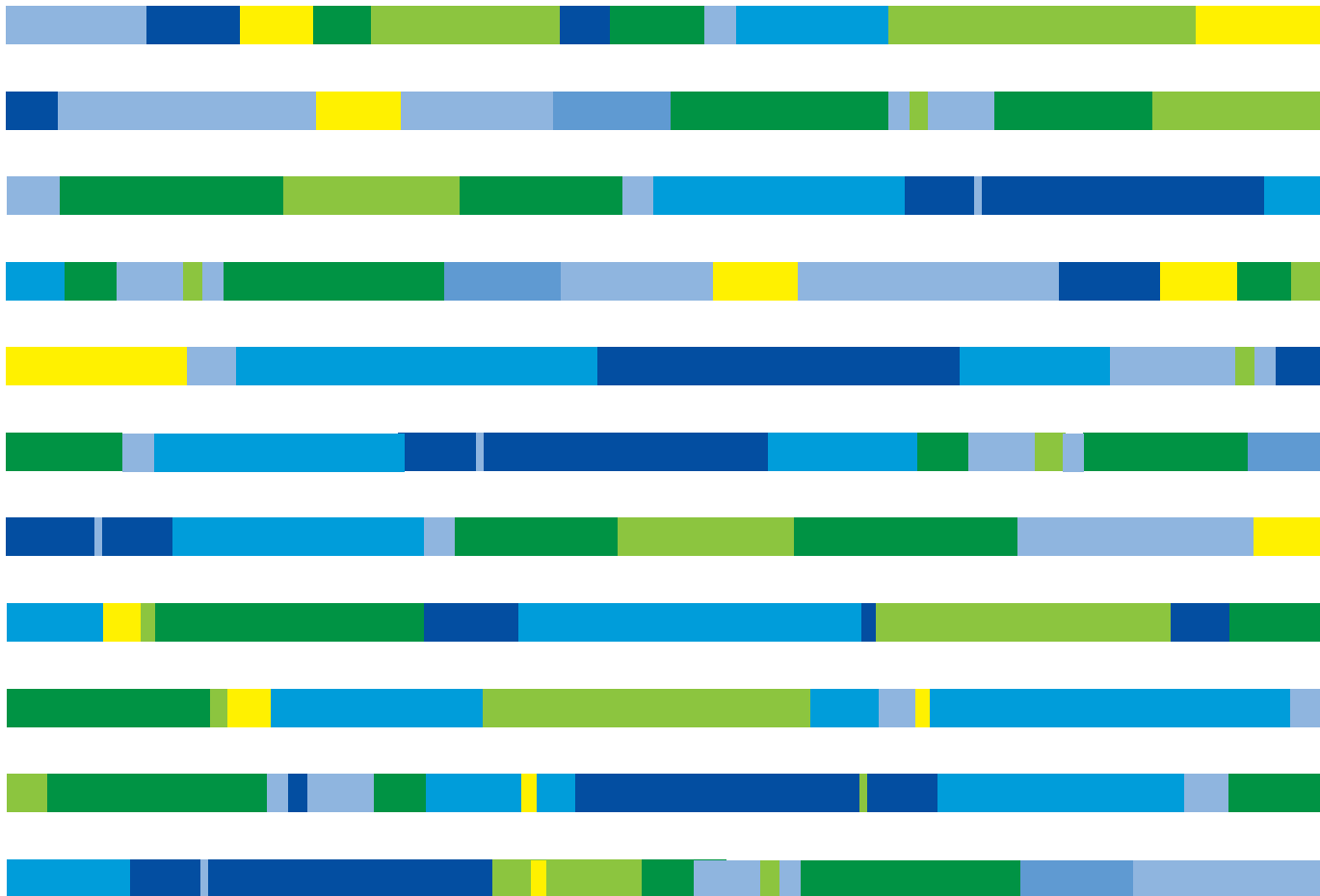
EN

European inventory on validation of non-formal and informal learning 2023 update

THEMATIC REPORT:

Validation in the green economy

Author: David Scott



Acknowledgments

This thematic report was produced by David Scott, as part of the 2023 update to the European Inventory on validation, a project managed by ICF (lead consultants: Manuel Souto-Otero, Michael Richardson, Ilona Murphy, Valentina Musso and Flora Dussine) in association with 3s (lead consultants: Karin Luomi-Messerer, Monika Auzinger, Julia Fellingner, Mariya Dzhengozova and Daniel Unterweger) under the supervision of a Steering Committee formed by the European Commission (Koen Nomden, Aline Juerges and Klara Engels-Perenyi), Cedefop (Ernesto Villalba-Garcia), and the ETF (Maria Rosenstock).

Work was carried out under DG EMPL Implementing Framework Contract EAC-01-2019 – Request for Services VT/2021/059

Disclaimer:

The contents of this publication do not necessarily reflect the position or opinion of the European Commission, Cedefop, the ETF, ICF, the EQF AG members or the other QA contacts. Neither the European Commission nor any person/organisation acting on behalf of the Commission is responsible for the use which might be made of any information contained in this publication. The publication has neither been edited nor proof-read by Cedefop's editing service.

Please cite this publication as:

Scott, D. (2024). *European inventory on validation of non-formal and informal learning, 2023 update. Thematic report: Validation in the green economy*. European Commission and Cedefop. <https://www.cedefop.europa.eu/en/country-reports/european-inventory-validation-non-formal-and-informal-learning-2023-update-thematic-report>

Contents

CONTENTS	3
CHAPTER 1. INTRODUCTION	4
CHAPTER 2. GROWTH OF THE GREEN ECONOMY AND GREEN SKILLS.....	5
2.1. Policy support for promoting the development of green skills	5
2.2. Job Creation and Skills Demand in the Green Economy	6
2.3. The role of education and training in meeting demand for green skills	7
CHAPTER 3. ROLE OF VALIDATION OF NON-FORMAL AND INFORMAL LEARNING IN MEETING DEMAND FOR GREEN SKILLS	8
3.1. Validation of non-formal and informal learning in relation to green skills.....	8
3.2. Examples of new courses and new certifications/qualifications that incorporate validation practices	9
3.3. Examples of Individual Learning Accounts and micro-credentials	11
CHAPTER 4. CONCLUSION.....	13
REFERENCES.....	15
ABBREVIATIONS	17
ABSTRACT	18

CHAPTER 1.

Introduction

This report draws on information provided in country reports and fiches as part of the Inventory of validation of non-formal and informal learning. Experts were asked to answer questions related to validation in the green economy. The report also draws on policy papers and wider research to consider the potential role of validation in the green economy.

The second chapter looks at the growth of the green economy and green skills, beginning with an outline of EU policy support for the development of green skills. The section then looks at how the transition to climate-neutrality could be pivotal in job creation, but with considerable challenges to address relating to reallocation of labour through reskilling. The section then looks at the role of education and training in meeting demand for green skills. The report does not find any evidence that validation features significantly in current measures.

The third chapter discusses the role of validation of non-formal and informal learning in meeting demand for green skills, and makes clear that validation in relation to green skills is not happening systematically under that header. Still, there is some development of new education and training provision in the form of new courses and new certifications/qualifications that directly relate to technical and occupational-specific skills and competencies in the green economy. This chapter outlines some key examples in this respect.

The fourth chapter includes the conclusion and considers the overall potential for validation in the green economy and what kind of approaches may be needed to promote it.

CHAPTER 2.

Growth of the Green Economy and Green Skills

2.1. Policy support for promoting the development of green skills

The green transition is a top priority for the EU and one of the main challenges facing societies and labour markets in Europe, and globally. To achieve a sustainable future, the EU needs to make significant changes to the way we produce and consume energy, food, and materials. The European Union (EU) has taken an active role in the development of green skills policies, to complement actions in Member States. The [European Green Deal](#) set out the aim of making the EU climate neutral by 2050, and outlines goals for several economic sectors, including transport, food, construction and biodiversity. It set out to transform the European Union into a modern, resource-efficient and competitive economy, ensuring no net emissions of greenhouse gases by 2050; economic growth decoupled from resource use; no person and no place left behind.

A key aim of the Green Deal is to future-proof jobs and skills training for the green transition. This will require a great upskilling and reskilling effort, as many workers will need to acquire new skills to work in the green economy with new occupations emerging and existing ones changing. The [European Skills Agenda](#) provides a set of policy measures to ensure that the EU has the skilled workforce that it needs to transition to a green economy through actions on skills intelligence, skills development and skills documentation. It highlights that many Europeans will need to retrain in a new skill or improve their existing skills to adapt to the changing labour market.

The European Year of Skills provides a fresh impetus to up-skilling and re-skilling, empowering people and companies to contribute to the green and digital transitions, supporting innovation and competitiveness.

There are two European projects belonging to the Erasmus+ Programme for implementing a new strategic approach to sectoral cooperation on skills. They are contributing to the development of green skills in key sectors through progressing new occupational profiles.

Project [MATES](#)' objective is to develop a skills strategy that addresses the main drivers of change to the maritime industry, in particular shipbuilding and offshore renewable energy. One of the expected results is validation of training

and education pathways for effectively increasing employability and career opportunities.

In the construction sector, [Construction Blueprint](#) is supporting a better matching between skills need of companies and skills provided by training centres. A key activity strand is identifying and selecting occupational profiles that should be updated in terms of energy efficiency.

2.2. Job Creation and Skills Demand in the Green Economy

The transition to climate-neutrality could entail job creation, given the right conditions (European Commission, 2023). However, key challenges related to a higher 2030 climate ambition are identified as:

Labour reallocation across sectors, occupations and regions. Businesses, especially SMEs could face challenges in re-skilling and ensuring access to the workforce they need;

A structural shift and changing skill requirements in the economy, in particular leading to a decline of sectors and jobs linked to fossil fuels extraction and carbon-intensive manufacturing ⁽¹⁾.

These challenges relate to the ability of workers to move from a job in a given sector and occupation to another sector and potentially another occupation requiring some of the skills that they already possess as well as new skills. They also relate to the ability of the labour market to match labour demand and labour supply, and the ability of the education and vocational training systems to train and re-train workers. This means attending to the potential frictions in the economy, e.g. in matching labour supply and demand and ensuring that education and training track the skills needs of the economy. Therefore, significant labour reallocation within and across sectors will require large-scale investment in reskilling and upskilling.

While it is difficult to predict the level of job creation as a result of the green transition, DG EMPL's Annual Review of Employment and Social Developments in Europe 2023 (European Commission, 2023), points to forecasts of job creation between 1 million and 2.5 million jobs by 2030 in sectors with enhanced economic activity due to greening, as well as in other sectors indirectly affected. Jobs creation in the green economy is likely to be wide-ranging and multifaceted. Cedefop

(1) See e.g. Cedefop (2021). [The green employment and skills transformation – Insights from a European Green Deal skills forecast scenario](#). Publications Office of the European Union.

suggest that there are employment effects of the European Green Deal in all sectors, with most pronounced impact on sectors including electricity, steam gas and air-conditioning, manufacturing, construction, transport, and waste management (Cedefop, 2023). The up- and reskilling and transition potential does not only cover high-skilled jobs, but also manual and elementary occupations, for example in waste management. As well as frontline green professionals who implement green technology at scale, also needed are: experts with green technological expertise; digital professionals; professionals who manage the green transition (management and HR); professionals who engage citizens to be part of the green transition; and trainers.

2.3. The role of education and training in meeting demand for green skills

Under the Council Recommendation on ensuring a fair transition towards climate neutrality (Cedefop, 2023), Member States commit to take measures and actions, adapted to their circumstances, notably for promoting access to quality education and training, promoting equal opportunities and stimulating adult participation in life-long learning, including skills needed for the green transition.

Individual Learning Accounts (ILAs) can also play a role in the validation of non-formal and informal learning helping to meet the demands for green skills. The Council of the European Union has recommended that individual learning accounts be used to access validation, including skills assessment opportunities (Council of the European Union, 2022b). The recommendation states that it is necessary to provide individuals with tailored support, and to ensure closer coordination with guidance services and effective tailoring of validation initiatives for disadvantaged and vulnerable groups.

Member States are also recommended, where appropriate, to support the ongoing and emerging development of micro-credentials within non-formal and informal learning settings (Council of the European Union, 2022a). Micro-credentials could help certify the outcomes of small, tailored learning experiences. They make possible the targeted, flexible acquisition of knowledge, skills and competences to meet skills demand.

CHAPTER 3.

Role of validation of non-formal and informal learning in meeting demand for green skills

3.1. Validation of non-formal and informal learning in relation to green skills

Significant policy measures are needed to support the reallocation of labour and reskilling and upskilling and to meet the growing demand for skills for the green transition. Validation of non-formal and informal learning has a potential role in ensuring that the workforce has the skills and qualifications required to deliver on the green transition.

Validation of non-formal and informal learning does not seem to be a significant feature of European strategies and policies on the issue, except for a recent development in Spain. To incentivise the acquisition of climate-related skills, the recent VET Act aims to promote the validation of prior learning obtained through work experience and non-formal training, with a focus on combating climate change and advancing the transition to cleaner energy sources (Spain. Government, 2022). This reform recognises the value of informal education alongside formal and non-formal approaches insofar as it clarifies equivalences between skills acquired in the three ways. The idea is to foster climate change awareness through formal, non-formal and informal learning. This plan also aims at countering skills inequalities among the adult population by allocating resources to non-formal education initiatives that target vulnerable groups and actively involves them in the fight against climate change.

Based on information obtained through the national reports of the European Inventory on validation of non-formal and informal learning, there are no other examples of distinct, system-wide national validation in the green economy. Validation of non-formal and informal learning in the green economy is generally carried out as part of the same structures and processes as for other economic sectors more generally. There are also no examples of distinct, system-wide information, advice and guidance (IAG) or outreach in relation to validation in relation to the green economy. Such practices are carried out as part of the overall structures and processes of IAG for validation that are relevant to all sectors.

3.2. Examples of new courses and new certifications/qualifications that incorporate validation practices

There is some development of new education and training provision in the form of new courses and new certifications/qualifications that directly relate to technical and occupational-specific skills and competencies in the green economy. There are examples where validation of non-formal and informal learning is possible within these courses to gain access to the courses or gain exemptions. This means that workers from industries in need of transformation (e.g. mining, manufacture of chemicals, manufacture of motor vehicles etc.) can have their skills and competencies validated in order to acquire new formal education qualifications, as well as certifications, in demand in green industries. Workers in construction, for example, may be able to have their skills and competences validated in order to retrain in areas such as buildings renovations and higher energy efficiency standards in construction. In mining, the energy transition calls for mobility-oriented up- and re-skilling, so that workers can make the transition to greener sectors or occupations (Cedefop, 2021). Workers extracting coal can acquire new skills to find employment in renewable energy technologies.

In some cases, education and training providers have taken a lead in developing courses and validation arrangements.

In Ireland, there is a new Sustainable Farming Academy at the University College Cork (UCC) Adult Continuing Education unit. The university has committed to delivering its existing Diploma in Environment, Sustainability and Climate to 20 participants per year from a food company. The duration of the diploma has been reduced to one year for employees, in recognition that they will already have achieved the learning outcomes for three modules, amounting to 30 credits (50% of the entire programme) through training they have completed with the company.

The Dundalk Institute of Technology (DkIT), also in Ireland, uses validation as part of the admissions process for a new part-time degree programme in agricultural sustainability. The programme is targeted at individuals who have earned a “Green Cert” and who have significant experience, but do not have a qualification above NFQ Level 6. The Green Cert course is a Level 5 or 6 qualification designed for school leavers and is available in Agricultural colleges nationally. Some Green Cert courses are accessible through a validation component but this depends on the provider. Also in Ireland, the HCI-funded IKC3 Knowledge Centre for Carbon, Climate and Community Action offers a range of flexible learning pathways to support the transition to carbon neutral, which includes a pillar for validation. In Italy, FOR.AGRI, the National Joint Fund for

Continuing Training in Agriculture, is fostering the validation of competences in the field of agriculture.

In several countries, authorities have helped to progress validation in the green economy through establishing the basis for new provision. For example, in Portugal in 2023, four new short and medium-term courses were included in the National Catalogue of Qualifications, mainly targeted at low-skilled and unemployed people. The courses allow candidates to accumulate credits/units through validation. This is part of the Green Skills and Job Program, a professional training programme in the area of energy. The strategic objective of this Program is the professional training and requalification of workers from companies and other employers directly or indirectly affected by the increase in energy costs, and of the unemployed, with a view to preventing the risk of unemployment, promoting the maintenance of jobs and stimulating the creation of new jobs, within the scope of accelerating the green transition and energy efficiency. The initiative consists in the creation of medium duration training courses (300h/350h), designed in units of competence or short duration training units in the area of green skills. Using standards based on the National Catalogue of Qualifications, training providers can develop their own tools to support education and training practice such as toolkits, software, digital learning tools, etc. So far, there are courses available in solar energy; wind energy; photovoltaics; sustainable agriculture and hydrogen.

In North Macedonia, the national qualification road map identifies skills needs and shortages regarding [increasing energy efficiency and renewable energy sources building skills in the country](#). The EU-supported [TRAINEE](#) (TowaRd market-based skills for sustAINable Energy Efficient construction) project developed training for priority skills listed in the road map. To upskill the workforce, previous voluntary qualification schemes from BUILD UP Skills projects were first updated and a process developed for the validation of prior learning for several professional groups: on-site workers; technicians/engineers; architects and designers; as well as installers of solar-thermal energy and photovoltaic systems.

BUILD UP Skills is a strategic initiative initiated by the European Commission in 2011 under the Intelligent Energy Europe programme. The aim has been to increase the number of trained and qualified building professionals across Europe to deliver building renovations offering high-energy performance as well as new nearly zero-energy buildings.

In France, 12 of the 116 Centres of vocational excellence (CoVe) (*Campus des métiers et qualifications*) are dedicated to energy transition and eco-industry. As well as offering a combination of Initial Vocational Education and Training (including apprenticeship), Continued Vocational Education and Training, the

Centres also offer support for validation/recognition of non-formal and informal learning in the areas of energy transition and eco-industry.

Outside of formal education and training providers and authorities, many private sector education providers are active in the delivery of non-formal learning on green skills. For instance, [Strevon](#) is a Netherlands-based training provider and job agency in the technical sector. They offer free re-skilling programmes for becoming a solar panel installer in the Netherlands. When becoming a full-time employee, the trainee received a free of charge training programme under working hours. The courses are not formally quality assured (Broek, S, 2023).

Finally, individual companies are also active in this area. A key example is Europe's largest car parts supplier (Bosch), which has allocated around EUR 2 000 million over the course of a decade to [retrain some of its 400 000 staff](#) so that mechanical engineers become software developers. Also, skilled workers from combustion technology were reskilled to work in electric mobility, to limit job losses as the industry switches from combustion engines to electric technology. Such training will normally be based on the identification and assessment of staff current profiles and skills, and the gaps that they need to fill to enter their new roles - a validation and guidance process linked to the provision of training.

3.3. [Examples of Individual Learning Accounts and micro-credentials](#)

In practice, there are relatively limited examples of the use of Individual Learning Accounts (ILAs) and micro-credentials in promoting validation.

However, an example from Finland shows how the widening use of open badges is increasing awareness and enabling validation. They are marketed by the organisations that are issuing them: in education and training, NGOs, businesses, as well as the Finnish Open Badge Factory which is the most frequently used platform for developing and issuing open badges in Finland. The Finnish Open Badge Factory has recently (2021) launched climate badges that enable learners and providers (secondary schools) to acquire and show climate competence with focus on community level climate action. The badges help learners to show their relevant skills and competences acquired in NGOs etc. and enable validation in formal education and training. Another example is Open Badges in sustainable tourism, which are under development with the help of funding from the Service Centre for Continuous Learning and Employment SECLE (JOTPA).

In Belgium a partnership between the University of Leuven, four non-university colleges and a tertiary art college across the region established the

lifelong learning initiative Continue (Boeren, E., 2023). In addition to offering Postgraduate Certificate programmes, this partnership offers shorter courses such as workshops, webinars, Massive Open Online Courses (MOOCs) and micro-credentials on technical skills as well as generic professional and transversal skills. The existing courses on 'Micro-credentials Energy Technology' are an example in the field of technical green skills development. Offered at the technology campus at a non-university college in Ghent, the course is accessible for those with or without a tertiary education degree. The micro-credentials obtained after successful completion of the course can be recognized as prior learning in a bachelor's degree programme.

CHAPTER 4.

Conclusion

There is a growing demand for 'skills for the green transition'. These include technical skills and competences to implement protection of ecosystems and biodiversity, and to reduce energy, materials and water consumption. They also include relevant transversal skills and competences, including a broad range of knowledge, abilities, values and attitudes. This demand is being driven in part by the European Green Deal, which has the goal of no net emissions of greenhouse gases by 2050. Aligned with this, the European Skills Agenda is promoting skills retraining to adapt to the transition to a green economy.

The transition to climate-neutrality offers opportunities for job creation. However, as labour is reallocated across sectors, occupations and regions, businesses face challenges in re-skilling and ensuring access to the workforce they need. At the same time, there will be less demand for skills related to jobs linked to fossil fuels extraction and carbon-intensive manufacturing. A key issue therefore is the ability of workers to move from a job in a given sector and occupation to another sector and potentially another occupation requiring different skills. For example, unemployed people who had been employed in declining sectors could have their occupational skills and competences from their previous jobs validated to gain employment in growing sectors. The same is true for employed workers in industries in transition where workers must take on new job roles.

The up- and reskilling and transition potential does not only cover high-skilled jobs, but also manual and elementary occupations, for example in waste management.

Significant policy measures are therefore needed to support the reallocation of labour and reskilling and upskilling and to meet the growing demand for skills for the green transition. The Council Recommendation on ensuring a fair transition towards climate neutrality sets out a range of such measures, and validation of non-formal and informal learning can play a role in ensuring that the workforce has the skills and qualifications required to deliver on the green transition. While validation is not explicitly featured as a way to deliver on demand for green skills and is not a significant explicit component of European strategies and policies on the issue, the reference to upskilling and re-skilling provides a framework for the connection of validation to the green transition that should be further explored.

Scoping of national level programmes and measures, as part of the Inventory, shows that there are no examples of distinct, system-wide national validation in the

green economy, or system-wide information, advice and guidance or outreach in relation to validation in the green economy. Such practices are carried out as part of the overall structures and processes of validation and IAG that are relevant to all sectors.

There is some development of new education and training provision in the form of new courses and new certifications/qualifications that directly relate to technical and occupational-specific skills and competencies in the green economy. There are examples where validation of non-formal and informal learning is possible within these courses to gain access through validation or gain exemptions. Exploring skills requirements in emerging occupations and tasks associated with the green economy and comparing them with existing occupations will facilitate the possibilities for validation of these identified competences.

References

URLs accessed 26.2.2023

- Boeren, E. (2023). *Country report on Green Skills: Belgium's Network of Experts on Adult Learning*. Report for the European Commission. ICF
- Broek, S. (2023). *Country report on Green Skills: The Netherlands' Network of Experts on Adult Learning*. Report for the European Commission. ICF.
- Cedefop (2023). *Skills in transition: the way to 2035*. Publications Office of the European Union. <http://data.europa.eu/doi/10.2801/43849>
- Cedefop (2021). *The green employment and skill transformation: insights from a European Green Deal skills forecast scenario*. Publications Office of the European Union. <http://data.europa.eu/doi/10.2801/112540>
- Council of the European Union (2022a). *Council Recommendation of 16 June 2022 on ensuring a fair transition towards climate neutrality 2022/C 243/04*.
- Council of the European Union (2022b). *Council Recommendation on individual learning accounts*, Brussels, 31 May 2022 (OR. en) 8944/22.
- Council of the European Union (2022c). *Council Recommendation of 16 June 2022 on a European approach to micro-credentials for lifelong learning and employability (2022/C 243/02)*.
- European Commission (2023). *Employment and Social Developments in Europe, Annual Review. Directorate-General for Employment, Social Affairs and Inclusion*.
- European Commission (2023). *Commission presents European Skills Agenda for sustainable competitiveness, social fairness and resilience* [News article, 1 July 2023].
<https://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=9723&furtherNews=yes>
- European Commission (2021). *CORDIS EU research results: Toward market-based skills for sustainable Energy Efficient construction (TRAIN), Horizon 2020 Project*. <https://cordis.europa.eu/article/id/430569-upskilling-energy-efficient-construction-in-north-macedonia>
- European Commission (2020), *Impact assessments of the 2030 climate target plan and the legislative proposals*, Brussels, 17.9.2020, Staff Working Document, 176 final.
- European Commission (2024). *European Green Deal*.
https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en
- Financial Times (2022). *Bosch to spend €2bn on reskilling workers as car industry shifts to electric*. Financial Times, 9 February 2022:
<https://www.ft.com/content/6e6be236-050a-4bfe-839b-653f6d8cb3ac>

Spain. Government (2022) Organic Law 3/2022, of 31 March, on the articulation and the integration of VET [Ley Orgánica 3/2022, de 31 de marzo, de ordenación e integración de la Formación Profesional]. Official Bulletin of the State [Boletín Oficial del Estado], 78: 1 April, BOE-A-2022-5139

Abbreviations

IAG	information, advice and guidance
MOOCs	Massive Open Online Courses
VET	vocational education and training

European inventory on validation of non-formal and informal learning 2023 update

This report is part of the 2023 update of the [European Inventory on the validation of non-formal and informal learning](#) provides a comprehensive overview of validation practices across Europe, covering 32 systems in EU-27 Member States and EFTA countries. It draws on information provided in country reports and fiches as part of the Inventory of validation. Experts were asked to answer questions related to validation in the green economy. The report also draws on policy papers and wider research to consider the potential role of validation in the green economy.

The European inventory is the product of a long-standing cooperation of the European Commission, Cedefop and ETF on the field. The inventory was endorsed by the [Council recommendation of 2012](#) on validation and works together with the [European guidelines](#) as a tool to support countries in developing and implementing validation arrangements. A rich source of information, the inventory informs dialogue and learning between countries and stakeholders developing and implementing validation in Europe. Our key objective is to support Member States so that more learners and workers can acquire and make visible new skills, which will support their career and further learning and improve their quality of life.

**CEDEFOP**European Centre for the Development
of Vocational Training

Europe 123, Thessaloniki (Pylea), GREECE
Postal address: Cedefop service post, 57001 Themi, GREECE
Tel. +30 2310490111, Fax +30 2310490020, Email: info@cedefop.europa.eu

visit our portal www.cedefop.europa.eu
