



Skills for the green transition: the importance of skills anticipation

ReferNet 2023 Partnership forum

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Today's presentation

- Cedefop's "green" work
- *Skills anticipation for the green transition* task



Supporting the green transition: Cedefop's approach



Cedefop explores environmental policies for over a decade:

[2019 Skills for green jobs](#)

[2015 Green skills and innovation for inclusive growth](#)

[2013 Skills for a low-carbon Europe](#)

Dec. 2019: EGD implications on jobs, skills and VET

Using skills intelligence to build up Cedefop Green Observatory ([Cedefop GO](#))



The jobs and skills impacts of greening

EUROPEAN GREEN DEAL

- About **2.5 million additional jobs** in the EU by 2030
- Employment benefits in **most sectors**, but some will be negatively affected (coal mining)
- **Indirect employment benefits** mainly for service-based sectors (e.g. information & communication, real estate)

- Up-/reskilling for all workers
- VET for workers' transitions in 'brown' sectors (e.g. conventional electricity)
- IVET to prepare future workers for green(er) jobs

TRANSITIONS

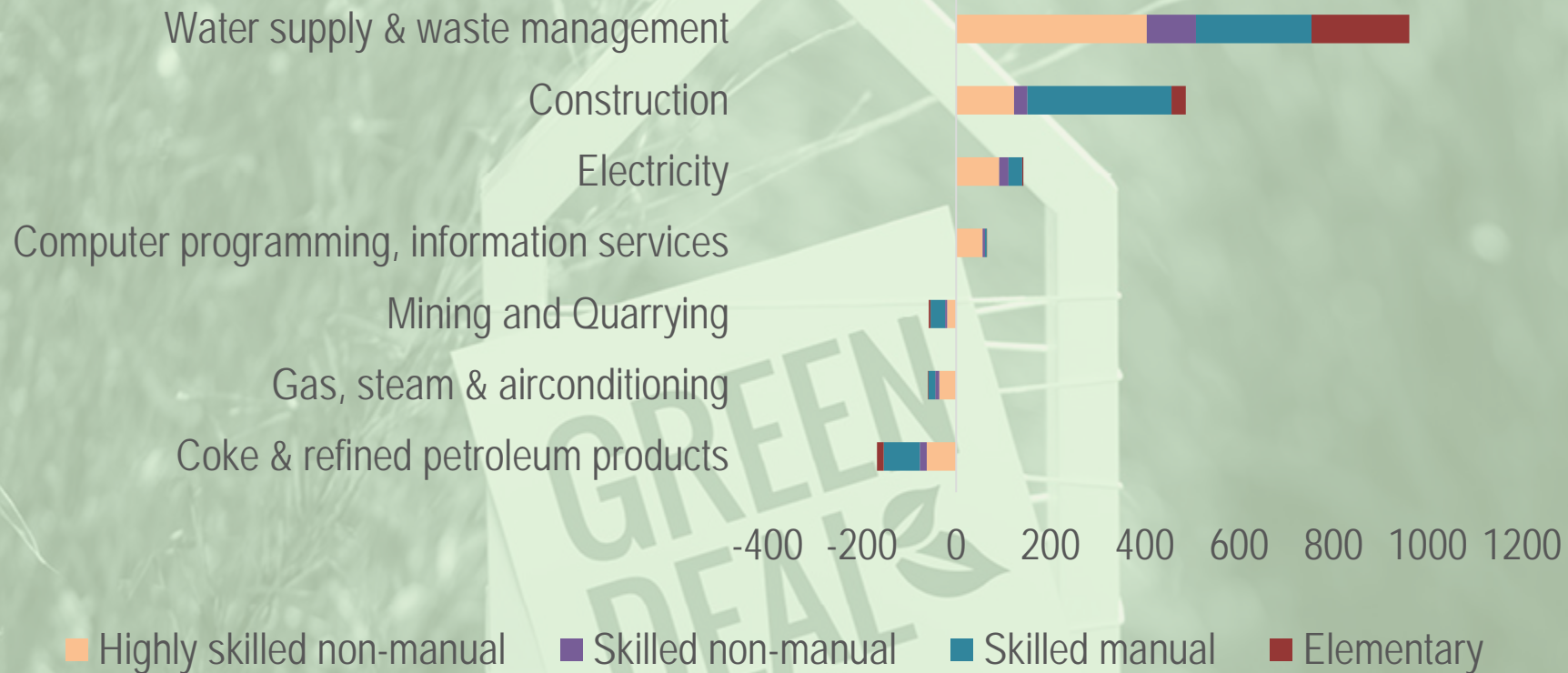
+ *numbers in thousands*

Water supply & waste management	961	
Construction	487	
Wholesale & retail trade	193	
Administrative & support services	153	
Electricity	142	
Basic metals & metal products	97	
Health	94	
Accommodation & catering	80	
Legal, accounting & consulting	79	
Architecture & engineering	74	
Computer programming/info services	65	

- *numbers in thousands*

Mining & quarrying	- 58	
Gas, steam & air conditioning	- 60	
Coke & refined petroleum	- 168	

Mapping trends to uncover up & reskilling potential



- Employment benefits at all skill levels
- Digital transformation as green transition driver: **twin skills demand transition**
- Possible recruitment bottlenecks

All occupations:

more sustainable practices and attitudes

Key occupations

(e.g. EV technicians)

'Thyroid occupations'

(e.g. hydrogen researcher)

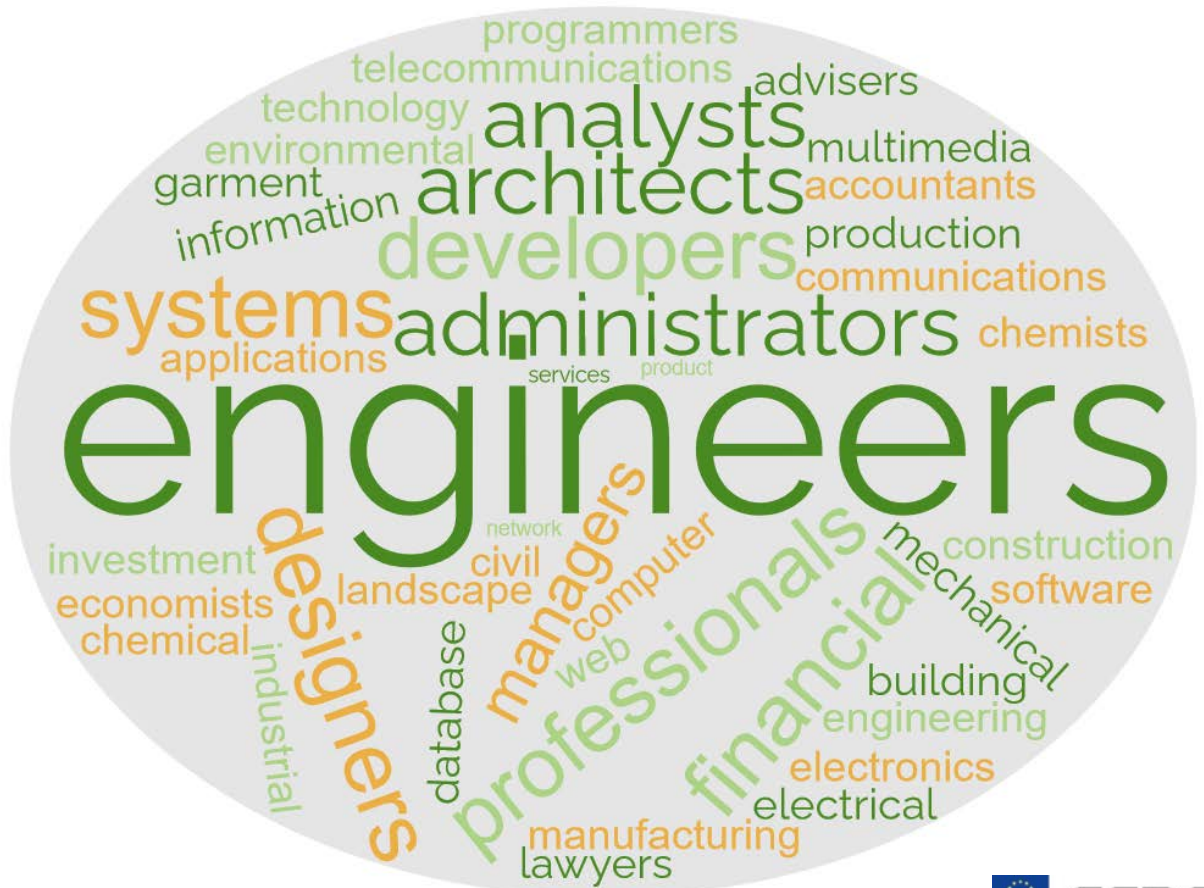


- Highly and medium-skilled
- Tasks change rapidly (emerging “greentech”)
- Inventing, designing, conceptualising green transition solutions:
 - Engineers, process designers, scientists/R&D

and implementing it:

- Managers, lawyers, renewable energy technicians, communication specialists

Small but indispensable: “thyroid” occupations are green transition enablers



Source: [Cedefop Green Observatory](#)

Cedefop sectoral **skill foresight**



1st online workshop

- look **towards the future (2030 and 2050)** & identify occupations/skill profiles to enable accommodate the changes the EGD requires
- how **VET** can be leveraged in developing the identified skillsets



two-round Delphi-style survey

- 1st round: issues raised in the workshop & assess consensus around them
- 2nd round: role VET might play in meeting the skill needs identified in the first round



2nd/validation workshop

Cedefop reported the findings from all stages of the foresight study to the experts, who discussed and validated them

Green jobs in the future of work and VET's role in accelerating transition



Frontline green jobs

Construction professional
Repair specialist
Energy professional
Material extraction/recycling/reuse expert
Material and process engineers
Circular product designers
Transport and mobility specialist
Environmental protection specialist

Greentech specialists

Industrial problem analysts
Industrial symbiosis facilitators
Hydrogen specialists
Urban space specialist
Energy expert
Circular economy plant designer
Agronomists



Green management

Green/smart city manager
Logistics manager
(Strategic) waste manager
Waste valorisation professional
Renewable energy managers

Digital specialists

ICT professional
Data scientists and data analysts
E-commerce specialists
GPS experts (precision agriculture)
Waste sorting optimisation professional

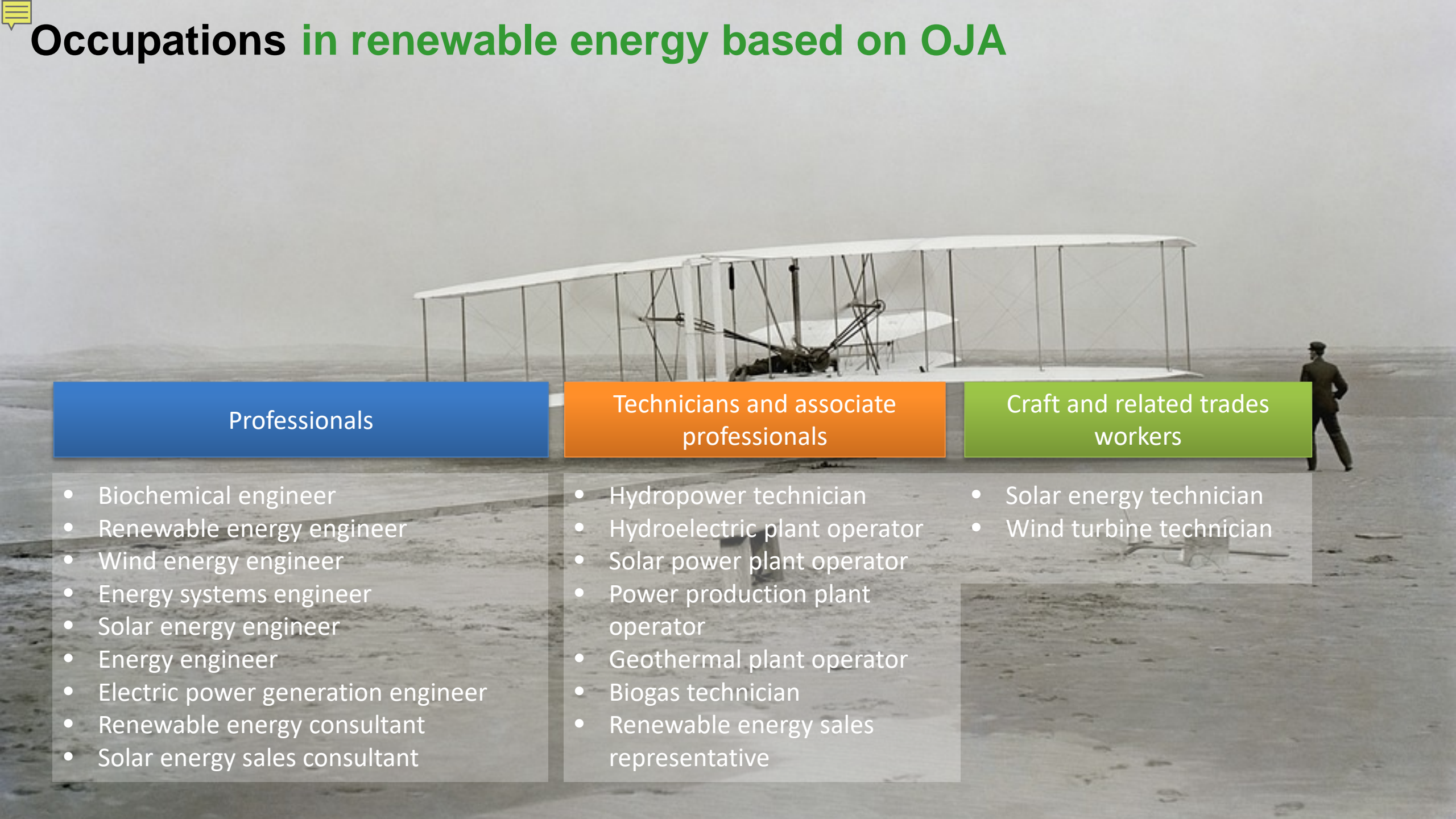
Green hearts and minds

HR specialists
Consumer behaviour specialists
Sustainability trainers
Waste management trainer
Citizen engagement specialist

Source: Cedefop green skills foresights in [cities](#), [waste management](#), [agri-food](#) and [circular economy](#)



Occupations in renewable energy based on OJA



Professionals

- Biochemical engineer
- Renewable energy engineer
- Wind energy engineer
- Energy systems engineer
- Solar energy engineer
- Energy engineer
- Electric power generation engineer
- Renewable energy consultant
- Solar energy sales consultant

Technicians and associate professionals

- Hydropower technician
- Hydroelectric plant operator
- Solar power plant operator
- Power production plant operator
- Geothermal plant operator
- Biogas technician
- Renewable energy sales representative

Craft and related trades workers

- Solar energy technician
- Wind turbine technician

Apprenticeship and the green transition

- Building new apprenticeship programmes
- Adapting existing apprenticeship programmes
- Green apprenticeships for up- and re-skilling adults
- Eco-innovation and the diffusion of green technologies across learning venues

Cedefop and OECD symposium – October 2021
[Apprenticeships for greener economies and societies](#)

[Fourth Policy Learning Forum on apprenticeships](#) – October 2022
The role and use of apprenticeships in upskilling and reskilling adults

Forthcoming policy brief on examples of “green” apprenticeships drawn from Cedefop community of apprenticeship experts



Apprenticeships
for greener
economies
and societies



PROVISION OF PROFESSIONAL DEVELOPMENT

THREE MAIN AREAS COVERED:

EARLY LEAVING FROM VET

- Focus on **VET teachers' role in tackling early leaving** and supporting learners at risk with development of related teacher training component
- **Projects and initiatives addressing inclusiveness** and supporting learners at risk with focus on: guidance/counselling, teacher training, young people with disabilities/SEN, refugees and migrants, second chance measures, mental health support



DIGITAL SKILLS AND BLENDED TEACHING AND LEARNING

- **Technical part:** tools and resources (SELFIE tool for VET and for work-based learning)
- **Theoretical part:** framework, strategies, guidelines (DigComp 2.2)
- **Support measures:** research, funding, networks, professional development programmes for teachers, workshops, adaptation of VET programmes



MORE FOCUSES:

- Psychosocial support
- Reintegration of NEETs
- Community involvement

GREEN SKILLS AND SUSTAINABILITY

- **Adaptation of VET programmes and curricula** to include green skills
- Creation of specific VET schools which **focus on UN's sustainable development goals (SDGs)**
- Cooperation between VET schools and ecological education centres and other NGOs
- New professional development **programmes targeting teachers' competences to teach green skills** and train them to support in-company trainers' green skills development



Green Skills initiatives

AREAS OF INITIATIVES	COUNTRY EXAMPLES	NUMBER OF COUNTRIES
Projects	Greenovet - Skills for a green Europe. More than 100 teachers are trained to provide excellence in teaching environment-related professional and key competences (AT, FI, PT)	12
VET programmes and qualifications	Adaptation of diplomas and qualifications to the challenges of green transition (FR)	9
Teachers' professional development	Courses on sustainable development, green skills, environmental education, climate protection (CY, HU, LU, LV, PL)	7
Tools	Website to help VET teachers in their work with sustainability in the classroom (SE)	5
Education plans	Environmental education action plan (ES)	5
Institutes, networks and cooperations	Network of Environmental Education Centers (CY)	3

Looking ahead

Cedefop's future work on the green transition



DEVELOPMENTS IN SECTORS, OCCUPATIONS, SKILLS

- Qualitative work and analyses on sectors and occupations
- Transitions in companies
- Sectoral skills foresights
- Understanding skills for the green transition (Skills OVATE)



APPRENTICESHIPS AND THE GREEN TRANSITION

- Cedefop Community of apprenticeship experts
- Explore good practices



STATE OF PLAY/GOOD PRACTICES IN MEMBER STATES

Understand developments in:

- VET (policies, curricula, programmes, modes of delivery, etc.) by shaping new 'green' skills anticipation methods



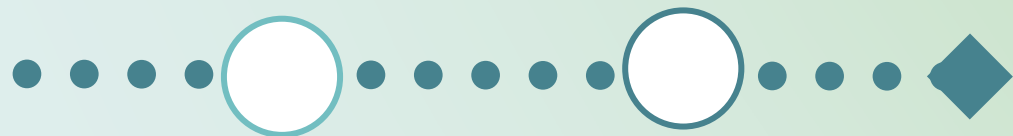
VET's enabling role and responsibility

Short-term (*sprint*)



Accompany change

Long-term (*marathon*)



Trigger change

- Recalibrating VET
- Targeted CVET: Adjust training to learners' needs (e.g., short-training modules; microcredentials)
- Work-based learning/apprenticeships
- Shaping circular economy citizenship
- Technical and digital skills; but also *empathy*
- “Green” skills anticipation/skills intelligence
- Stakeholder partnerships/skills ecosystems

Future-proofing jobs:
partnerships,
feedback loops,
learning to learn



Cedefop's skills governance framework

culture

history

	Organisation	Resources	Stakeholders	Use of information
Foundations	A Legal and institutional framework	D Funding and human resources	G Cooperation arrangements	J Feedback mechanisms
Processes	B Management and control	E Data, methods and expertise	H Feedback and validation	K Customisation and dissemination
Sustainability	C Vision and strategy	F Stability	I Integration of stakeholder needs	L Reputation

Approx. 57 facilitators
<160 descriptors

economy

demography

“Green” skills anticipation activities in countries

- Objective: Cedefop to **identify practices** in countries & understand **your views**
- Task activities:
 - Provide input to two questions in written format (Word document) and reply to a short EU Survey (4 questions)
- Input to enrich Cedefop’s “green” work: forthcoming guide on “green” skills anticipation, national country reports on skills anticipation etc.

“Green” skills anticipation activities in countries: written input (1)

The questions to be answered in written format will concern:

1) Any skills anticipation activity (e.g. skills forecast, foresight, assessment, survey focusing on employers or employees or graduates) in your country at the national, regional, or local level that specifically focuses on jobs or skills for the green transition

- the activity may be comprehensive or regard a sector (e.g. renewable energies) or a group of occupations (e.g. electricians)
- information and/or links to relevant sources, reports, websites etc.; and/or contact person Cedefop could address to identify this information

“Green” skills anticipation activities in countries: written input (2)

2) Are skills for the green transition or jobs relevant to the green transition incorporated in the overall skills anticipation methods and tools used in your country?

For example, the main skills forecast activity that is run by a ministry includes specific elements on the green transition; or sectoral skills councils in your country explore the implications of the green transition in jobs and skills in a systematic manner etc.

- English preferable; national languages, too

Possible sources to use

- Desk research: reports, websites of ministries/institutions (e.g., Ministry of Labour, Statistical Office, employers' organisations etc.)
- Interviews/discussions with, e.g., colleagues, experts, stakeholders involved in skills anticipation
- Personal knowledge/experience

Questions?



“Green” skills anticipation activities in countries: EU Survey

- To understand your views on the importance of “green” skills anticipation and of the challenges being faced in your country/region
- Online questionnaire (through the EU Survey tool)
- Multiple choice answers
- Based on your own knowledge, understanding and professional experience
- Contact details will be asked; but responses will be analysed/reported at an aggregate level

Questions?





Indicative schedule

Steps	Responsible	Task	Timing
1	Cedefop	Shares the Word file and links to EU Survey with ReferNet partners	6 June, 2023
2	Cedefop	Workshop on the deliverable: if needed, based on number of clarification requests from partners - an opportunity to discuss the task and clarify issues	Mid-June 2023
3	<i>Partners</i>	<i>Submit their responses to the EU Survey</i>	<i>6 July, 2023</i>
4	<i>Partners</i>	<i>Submit their input to the Word file</i>	<i>By 15 September, 2023</i>
5	Cedefop	Reviews the input and, if needed, clarifies pending issues with the partners	By 16 October, 2023
6	Cedefop	Provides ReferNet partners with a summary note and the key outcomes	1 December, 2023

Thank you



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