



# Skills for the green transition – realising VET's potential

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**EUROCHAMBERS**  
Green skills in the eyes of European businesses

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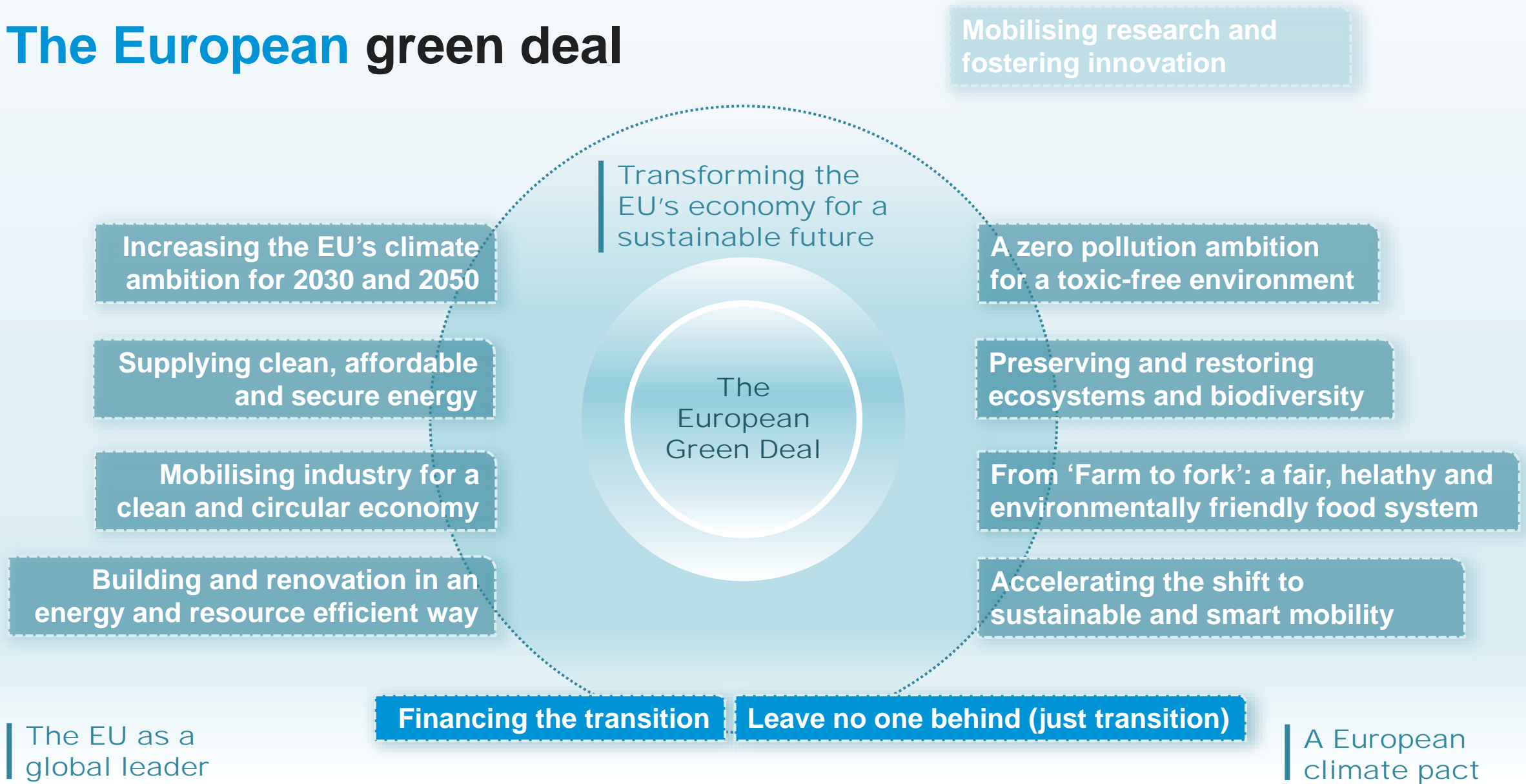


**CEDEFOP**

European Centre for the Development  
of Vocational Training



# The European green deal



# Supporting the green transition: Cedefop's approach

- Cedefop explores environmental policies for over a decade:  
e.g.  
2019 Skills for green jobs;  
2015 Green skills and innovation for inclusive growth;  
2013 Skills for a low-carbon Europe
- Focus on EGD implications on jobs, skills and VET since 2020
- New paradigm for economic and social activities
- Impact on all sectors, occupations, learners  
➔ implications for all VET-relevant policies and activities (design, provision, validation, guidance, adult learning, apprenticeship etc.)

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



- **Identify long-term trends in EU, sectors, occupations and skill-levels**  
The green employment and skills transformation  
Insights from a European Green Deal skills  
forecast scenario
- **Developments and trends in key sectors**  
Skills foresight exercises on *smart and green cities, waste management, circular economy, agri-food*
- **Identify skills trends through OJAs**
  - Green occupations and skills for green transition
  - Taxonomy of 'green' occupations



# The green employment and skills transformation sectoral shifts

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

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

## TRANSITIONS

### + *numbers in thousands*

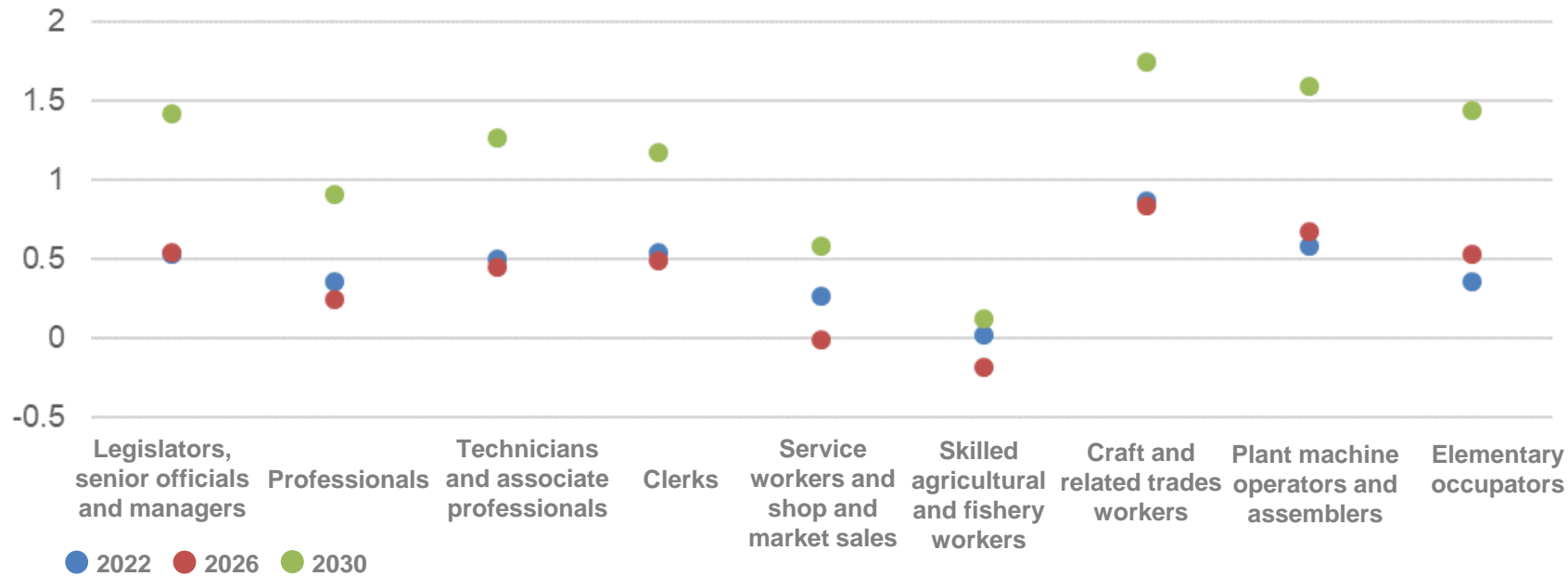
Water supply & waste management	961
Construction	487
Wholesale & retail trade	193
Administrative & support services	153
Electricity	142
Basic metals & metal products	97
Health	94
Accommodation & catering	80
Legal, accounting & consulting	79
Architecture & engineering	74
Computer programming/info services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

### - *numbers in thousands*

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

**Forecast employment impact of the EGD**  
(difference between EGD skills forecast scenario and baseline in 000s)  
**in selected sectors, EU-27**

# The green employment and skills transformation: occupational shifts



**All occupations:**  
more sustainable practices  
and attitudes

**Key occupations**  
(e.g. EV technicians)

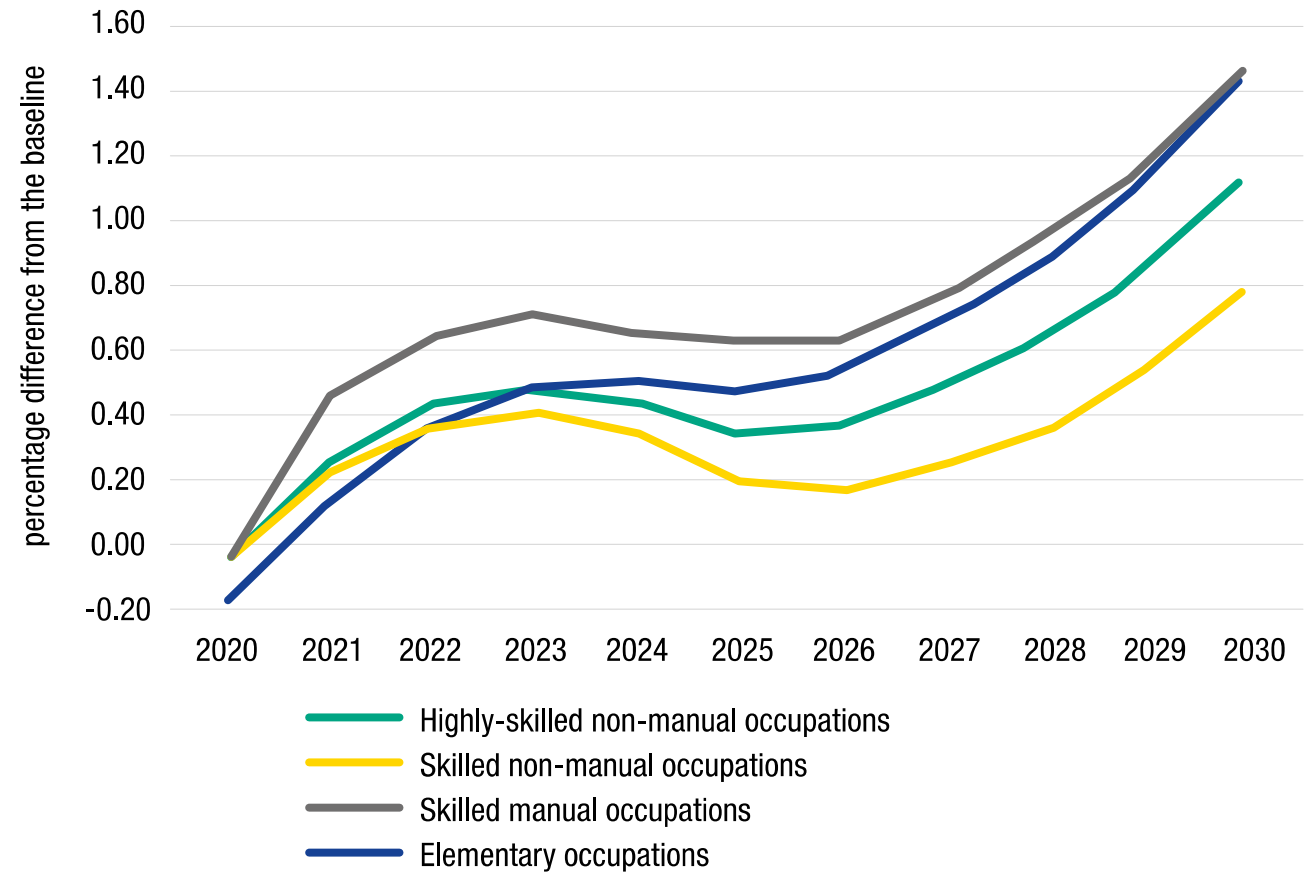
**‘Thyroid occupations’**  
(e.g. hydrogen researcher)

- Employment benefits for occupations at all skill levels: [EGD alleviates job polarisation](#)
- Digital transformation ignites and drives the green transition: [twin transition in skill demand](#)
- Increased demand for occupations where tasks/skills sets change ➡ possible recruitment bottlenecks

# The green employment and skills transformation: skill levels

A just transition for all skill levels:

- employment growth for manual and elementary occupations > high-skilled occupations
- benefits for medium-skilled occupations (refuse workers, building and related trades workers, electrical and electronic trades workers and drivers; customer service clerks and assemblers)



Alleviate progressive job polarisation in European job markets

# The green employment and skills transformation: transitions

- transitions across several sectors  
 ➔ mobility-oriented up- and re-skilling
- key drivers of change affecting skill profiles, e.g. automation in waste management
- Cedefop's skills foresights

Occupation	Coke & refined petroleum products	Gas, steam & air conditioning	Mining and Quarrying	Water supply, Sewerage, Waste management & Remediation activities	Construction	Electricity	Computer programming, information services
Highly skilled non-manual occupations	-62.7	-36.0	-19.4	404.1	122.5	90.9	56.3
Skilled non-manual occupations	-14.5	-8.4	-3.9	104.3	28.6	20.3	4.8
Skilled manual occupations	-76.8	-14.5	-31.4	244.9	305.2	28.5	3.7
Elementary occupations	-13.7	-1.3	-3.4	207.3	30.4	2.8	0.5
<b>Total</b>	<b>-167.8</b>	<b>-60.3</b>	<b>-58.2</b>	<b>960.5</b>	<b>486.6</b>	<b>142.4</b>	<b>65.3</b>



# Key take-away messages

- *sectoral focus* in education, training and skills policies
- need to better understand *EGD-driven jobs*: e.g. working conditions/attractiveness, training opportunities; talent acquisition and retention bottlenecks?
- better *skills anticipation*: help identify ‘skills ladders’ facilitating workers’ mobility to other sectors or alternative occupations within their sector
  - Cedefop [series of practical guides](#); and [new methods](#)
- *career guidance* and awareness-raising
- anticipated increase in skilled-manual and elementary occupations: VET, but also *migration, employment and social policies*
- investment in ‘*thyroid*’ occupations – *STEM skills*
- *geographic dimension*: importance of regional and local level

# Skills foresight exercises

- **Sectors:** Smart and green cities; waste management; agri-food; circular economy
- **Objective:** identify key occupations and skills to achieve EGD goals & relevant implications for VET
- **Results** in 2022 and 2023



## SMART AND GREEN CITIES

- Some 'green' skills are digital
- Importance of adjusting VET policies to local level

**Environmental specialist, climate officer, urban coordinator/ planner, network integration coordinator, ICT Engineer, data analyst**

## WASTE MANAGEMENT

- Increased skills and training demand even for elementary occupations
- More IT-related skills: automation/digitalisation drives new trends (e.g. blockchain)
- Increased future demand for 'softer' jobs: e.g. sales, marketing
- VET to prepare workers, raise citizens' awareness and engagement
- Local level (municipality) is important

Source: Cedefop skills foresight exercises on smart and green cities and waste management; preliminary findings

# VET's enabling role and responsibility

Short-term (*sprint*)



Accompany change

Long-term (*marathon*)



Trigger change



# 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

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Cedefop and OECD symposium – October 2021  
Apprenticeships for greener economies and societies

## Symposium paper summaries

[www.cedefop.europa.eu/files/2021-10/short\\_bios\\_and\\_paper\\_summaries\\_2.pdf](http://www.cedefop.europa.eu/files/2021-10/short_bios_and_paper_summaries_2.pdf)

Cedefop and OECD (2022). [Apprenticeships for greener economies and societies](#)





# Looking ahead

## Cedefop's future work on the green transition



### APPRENTICESHIP AND THE GREEN TRANSITION

- Briefing note [An ally in the green transition](#)
- Collection of evidence through Cedefop Community of apprenticeship experts



### DEVELOPMENTS IN SECTORS, OCCUPATIONS, SKILLS

- Qualitative work and analysis
- Sectoral skills foresight
- Understanding skills for the green transition (Skills OVATE)



### 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

# Thank you

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