

Session 6:

Qualifications are changing.

What's new?

Green and digital skills (Big Data)

Micro-credentials.

New dimensions, new data, new formats.

Common theme: Making Qualifications Frameworks operational in a time of change

Nairobi workshop: 9-11 October 2023

Speaker: Eduarda Castel-Branco

01

Change

Drivers of change

Digitalisation - Automation - AI

Covid-19

Greening of economy and society

Societal movements: rights, democracy, information, innovation

- The future of work arrived ahead of schedule
- “2 years of digital innovation in 2 months”
- Remote work: post-Covid19
- Wave of innovation and launch of new generation of entrepreneurs
- Digitally enabled productivity gains accelerate 4th Industrial Revolution
- Reskilling
- Learning anytime, anywhere, anything
- Hybrid skills
- New types of qualifications: micro-credentials, digital certificates

**'Double-disruption'
scenario for workers**

Tandem Covid-19
recession x automation &
digitalisation

Skills 2027: top in-demand...



The World Economic Forum's Future of Jobs 2023 report finds **analytical thinking, creative thinking and AI and big data will be top in-demand skills by 2027.**



Leadership and social influence and curiosity and lifelong learning are among other skills expected to see growing demand.



Six in 10 workers will require training before 2027, but only half of workers are seen to have access to adequate training opportunities, according to the report. Training priorities of companies (42%): AI and Big Data

Top Skills 2023



- **Cognitive skills** top the list of those deemed to be of greatest importance for workers in 2023.
- **Analytical thinking** is considered to be a core skill by more companies than any other skill, making up, on average, 9.1% of the core skills reported by companies.
- **Creative thinking** comes second, ahead of three self-efficacy skills – resilience, flexibility and agility; motivation and self-awareness; and curiosity and lifelong learning – which recognize the importance of workers' ability to adapt to disrupted workplaces.





ACQF Future of Jobs: top 10 skills 2023

Top 10 skills of 2023



- | | |
|--|--|
| 1.  Analytical thinking | 6.  Technological literacy |
| 2.  Creative thinking | 7.  Dependability and attention to detail |
| 3.  Resilience, flexibility and agility | 8.  Empathy and active listening |
| 4.  Motivation and self-awareness | 9.  Leadership and social influence |
| 5.  Curiosity and lifelong learning | 10.  Quality control |

Type of skill

 Cognitive skills  Self-efficacy  Management skills  Technology skills  Working with others

Source

World Economic Forum, Future of Jobs Report 2023.

Note











The skills judged to be of greatest importance to workers at the time of the survey



Cognitive skills top the list for 2023. Image: World Economic Forum

Top 10 skills on the rise



- | | |
|--|--|
| 1.  Creative thinking | 6.  Systems thinking |
| 2.  Analytical thinking | 7.  AI and big data |
| 3.  Technological literacy | 8.  Motivation and self-awareness |
| 4.  Curiosity and lifelong learning | 9.  Talent management |
| 5.  Resilience, flexibility and agility | 10.  Service orientation and customer service |

Type of skill

■ Cognitive skills
 ■ Self-efficacy
 ■ Management skills
 ■ Technology skills
 ■ Working with others
 ■ Engagement skills

Source

World Economic Forum, Future of Jobs Report 2023.

Note

The skills judged to be increasing in importance most rapidly between 2023 and 2027



Future of Jobs Report 2023 Image: World Economic Forum

Reskilling needs

44%

of workers' core skills
are expected to change
in the next five years



Source: World Economic Forum,
Future of Jobs Report 2023.

<https://www.weforum.org/agenda/2023/05/future-of-jobs-2023-skills>

Fastest growing vs. fastest declining jobs

Top 10 fastest growing jobs

1.	AI and Machine Learning Specialists
2.	Sustainability Specialists
3.	Business Intelligence Analysts
4.	Information Security Analysts
5.	Fintech Engineers
6.	Data Analysts and Scientists
7.	Robotics Engineers
8.	Electrotechnology Engineers
9.	Agricultural Equipment Operators
10.	Digital Transformation Specialists

Source

World Economic Forum, Future of Jobs Report 2023.

Top 10 fastest declining jobs

1.	Bank Tellers and Related Clerks
2.	Postal Service Clerks
3.	Cashiers and ticket Clerks
4.	Data Entry Clerks
5.	Administrative and Executive Secretaries
6.	Material-Recording and Stock-Keeping Clerks
7.	Accounting, Bookkeeping and Payroll Clerks
8.	Legislators and Officials
9.	Statistical, Finance and Insurance Clerks
10.	Door-To-Door Sales Workers, News and Street Vendors, and Related Workers

Note

The jobs which survey respondents expect to grow most quickly from 2023 to 2027 as a fraction of present employment figures

Future of Jobs Report 2023 Image: World Economic Forum

02

**Green and digital
skills – in-demand**

- Green with a touch of brown is the colour of recovery
- Greening of the economy and society – at heart of post-Covid19 recovery strategies and growth in many countries
- **Green growth opportunities abound across massive sectors such as energy, mobility, and agriculture.**
- Just as digital-economy companies have powered stock-market returns in the past couple of decades, so green-technology companies could play that role in the coming decades.
- EU, China, Japan, South Korea's Green New Deal, Canada, Africa – green stimulus packages

Major implications for jobs, education, training and skills;

- need to develop **environmentally friendly** technologies, production processes, products, services, and business models across all sectors of the economy;
- It changes the way **traditional occupations** are performed (and taught) and creates **new occupations**;
- It creates a demand for new skills and knowledge and the need to **upskill** and **reskill** large numbers of people;
- need to increase **environmental awareness** in education and training curricula;
- requires close interaction between education and training systems and their environments to build **skills ecosystems** in which skills development goes hand in hand with economic, technological and social change.

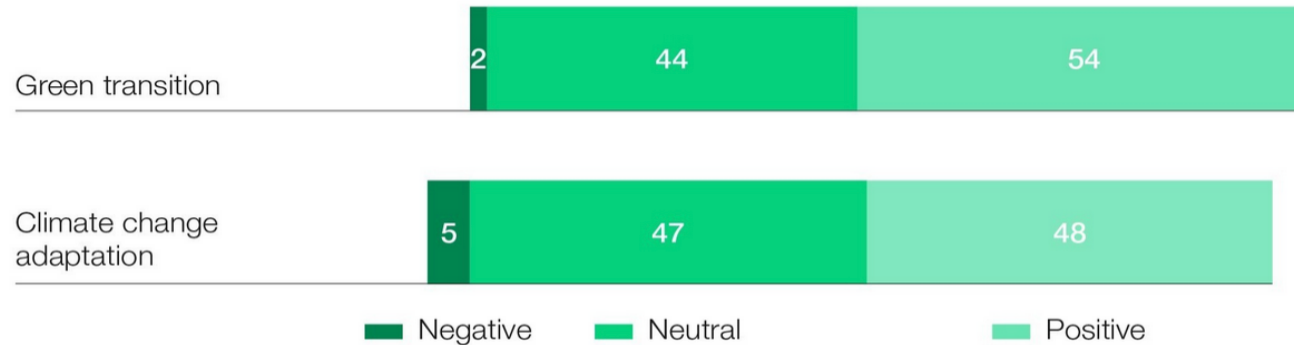
Green transition drives job growth

Future of Jobs

Green transition drives job growth



Expected impact of trends on jobs:



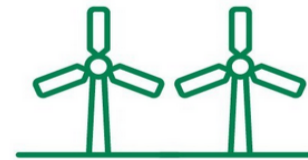
Including jobs such as



Sustainability specialist



Solar energy installation and system engineers, and



Renewable energy engineers.

Source: Future of Jobs, World Economic Forum, April 2023.

<https://www.weforum.org/agenda/2023/04/future-jobs-2023-fastest-growing-decline>

Greener jobs future

- To compensate for expected job losses, global efforts to decarbonize in response to the climate crisis are giving rise to a wealth of green jobs across sectors and industries.
- A green-recovery scenario could generate around 3.5% of additional global GDP growth and a net employment gain of 9 million new jobs each year, according to International Energy Agency data.
- The green transition could **create 30 million jobs globally in clean energy, efficiency and low-emissions technologies by 2030.**
- But while there has been continued growth in green jobs for the past four years, **reskilling and upskilling towards green skills is not keeping pace.**

03

**What is the labour market demand for -
green and digital skills?**

**Based on a data of ETF Big Data LMI
project (ex.: Egypt, Kenya)**



Green skills Demand

ETF Data – Online Job Vacancies Kenya, Egypt

Definitions



Green skills – an important area of debate and policy action and which has become a priority in research (quantitative and qualitative) and social communication. Several international organisations are working on the analysis and taxonomies related to green competences.

Cedefop defines green skills as "the knowledge, skills, values and attitudes needed to live, work and act in economies and societies that seek to reduce the impact of human activity on the environment".

Skills for the green economy consist of:

- **transversal skills**, linked to sustainable thinking and acting, relevant to all economic sectors and professions;
- **specific skills** needed to adapt or implement standards, processes and services to protect ecosystems and biodiversity and reduce energy, materials and water consumption;
- **highly specialised skills** needed to develop and implement green technologies such as renewable energy, wastewater treatment or recycling;

Skills for the green economy are also referred to as skills for green jobs, skills for the green transition or green skills.

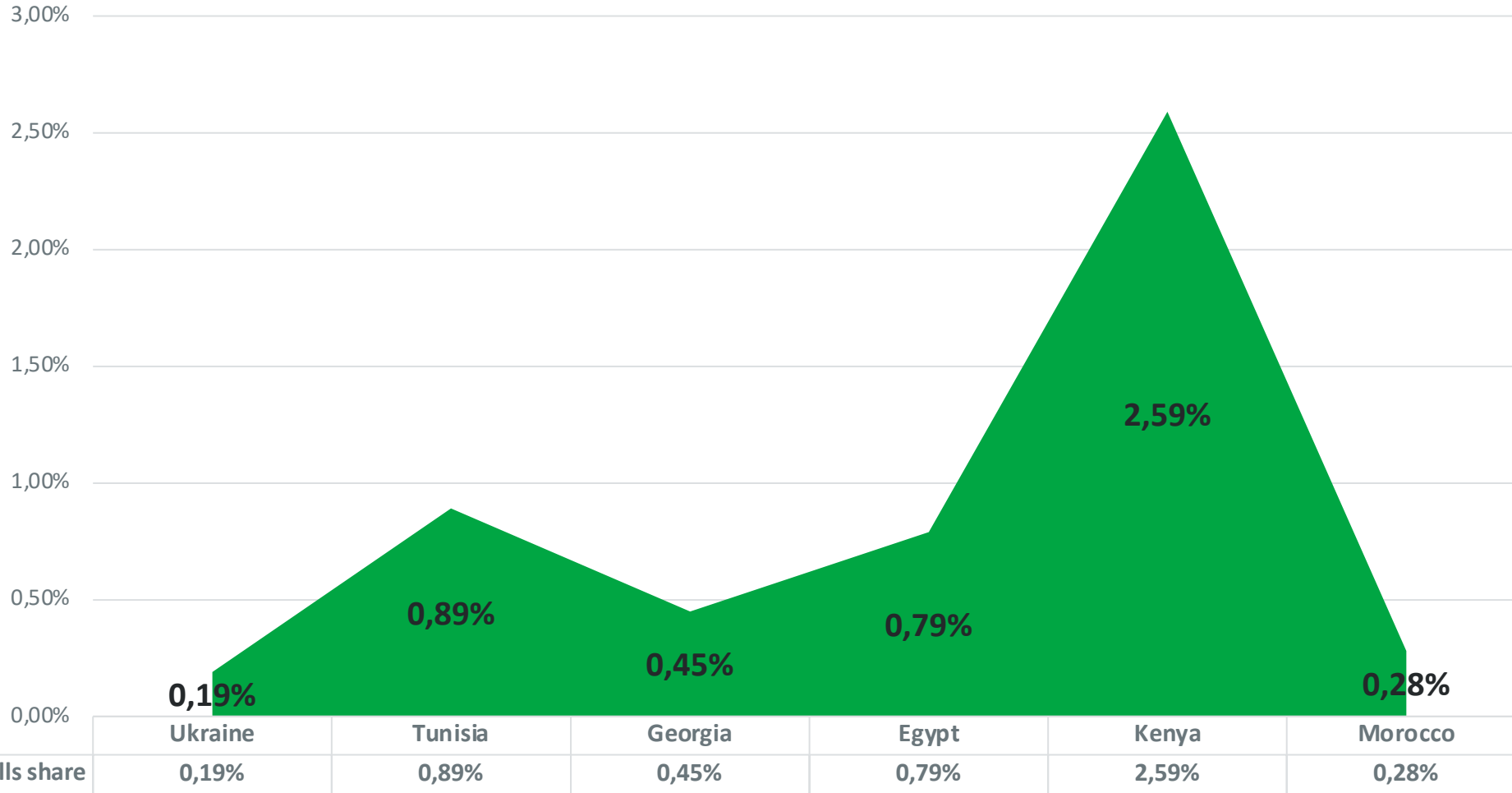
Analysis of demand for skills: online job vacancy data

- Dashboards ETF project

[https://solutions.emsibg.com/?pc=x\\$fhADtD*cu\\$BjY9](https://solutions.emsibg.com/?pc=x$fhADtD*cu$BjY9)

ETF project: Online job vacancy – Big data for LMI

Green skills share - data updated until 31/07/2023



Green skills share = share of online job vacancies that required at least 1 green skill

Kenya: highest green skills share, Ukraine – the lowest

Used green skills taxonomy: ETF (225 terms)

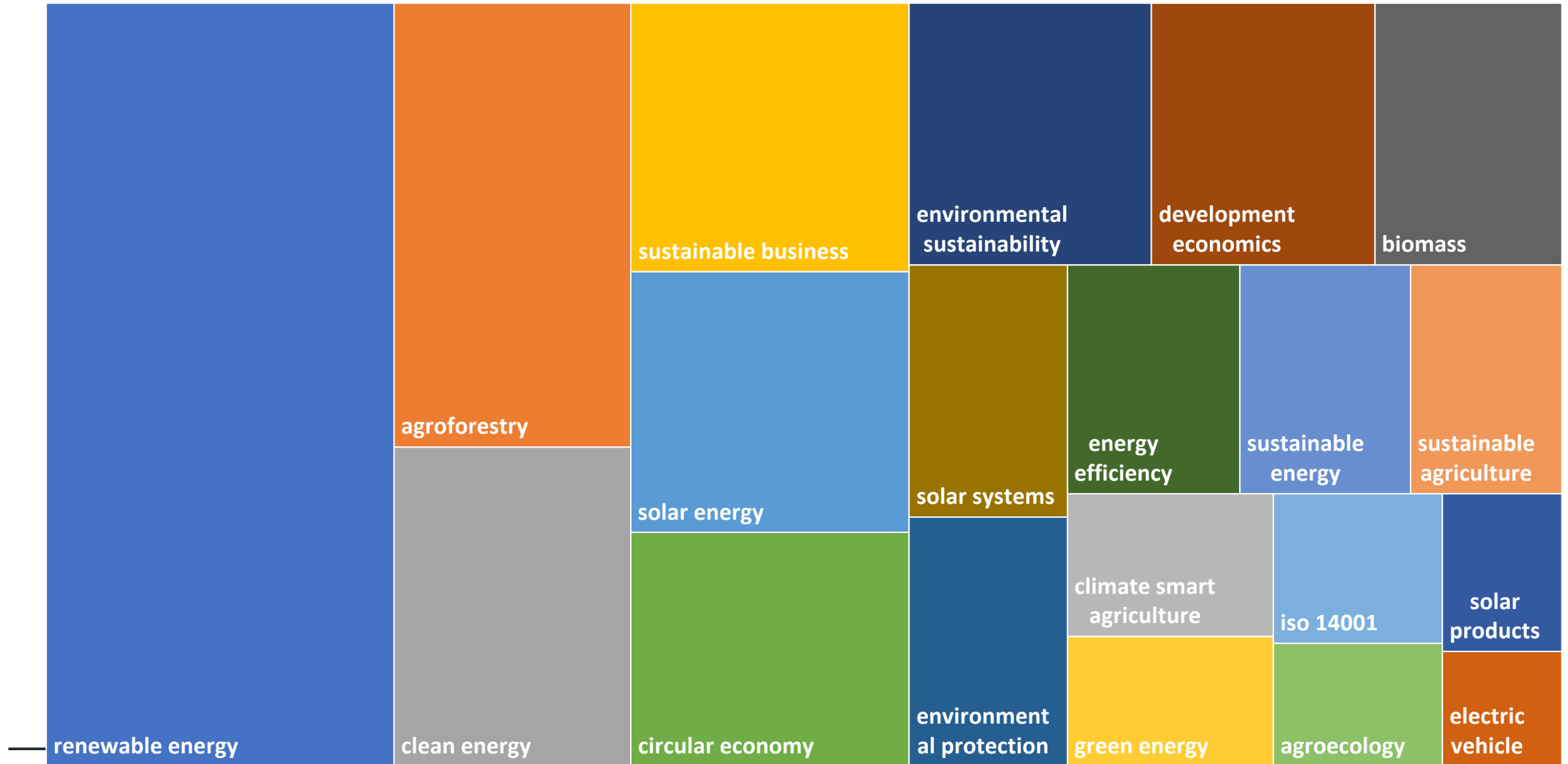
■ Green skills share

Top 20 Green Skills Kenya

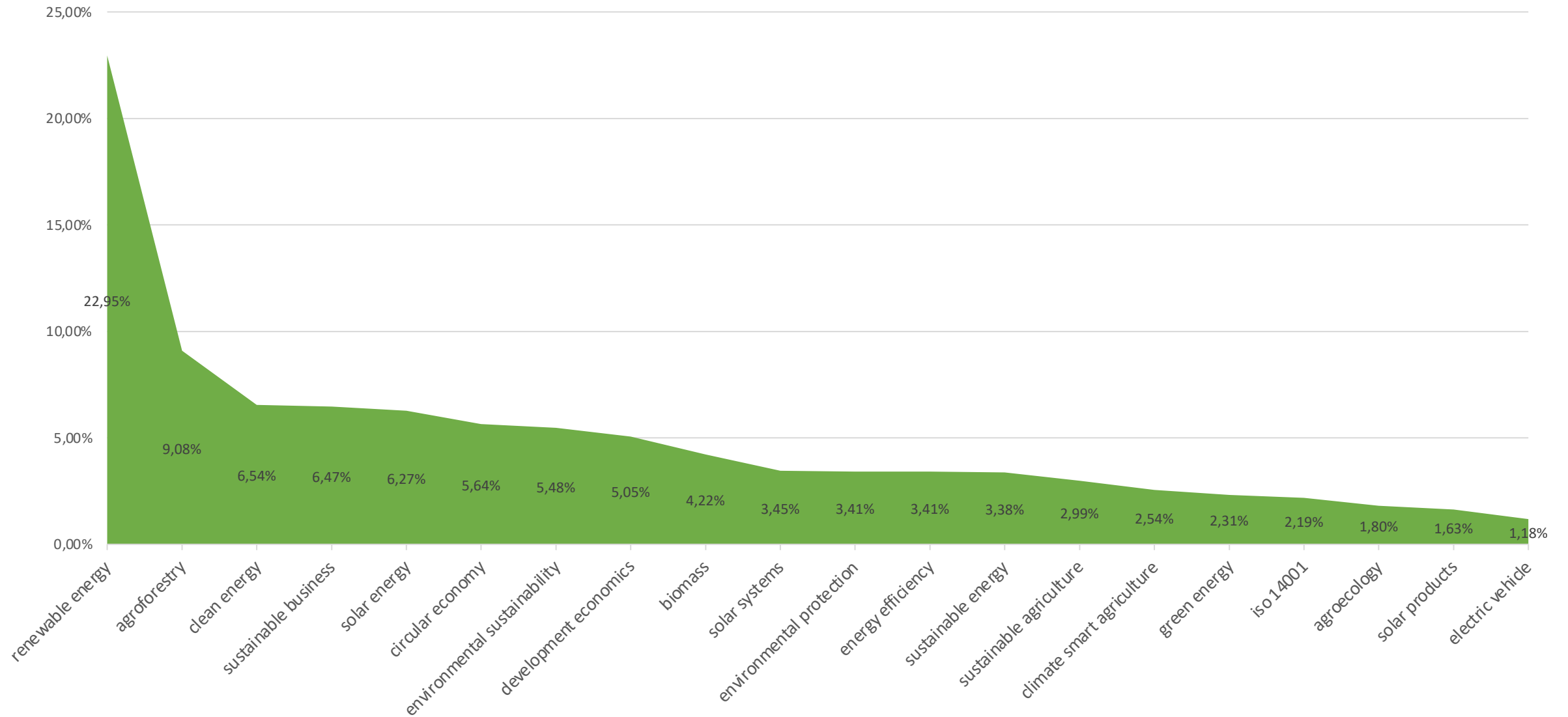
Skills / skill set	% (from 20)	Nº unique job postings
renewable energy	22,95%	2.598
agroforestry	9,08%	1.028
clean energy	6,54%	740
sustainable business	6,47%	732
solar energy	6,27%	710
circular economy	5,64%	638
environmental sustainability	5,48%	620
development economics	5,05%	572
biomass	4,22%	478
solar systems	3,45%	390
environmental protection	3,41%	386
energy efficiency	3,41%	386
sustainable energy	3,38%	382
sustainable agriculture	2,99%	338
climate smart agriculture	2,54%	288
green energy	2,31%	262
iso 14001	2,19%	248
agroecology	1,80%	204
solar products	1,63%	184
electric vehicle	1,18%	134

Top 20 green skills in OJV: Kenya

TOP 20 GREEN SKILLS KENYA - DATA COLLECTED: OCT 2022-JUL 2023

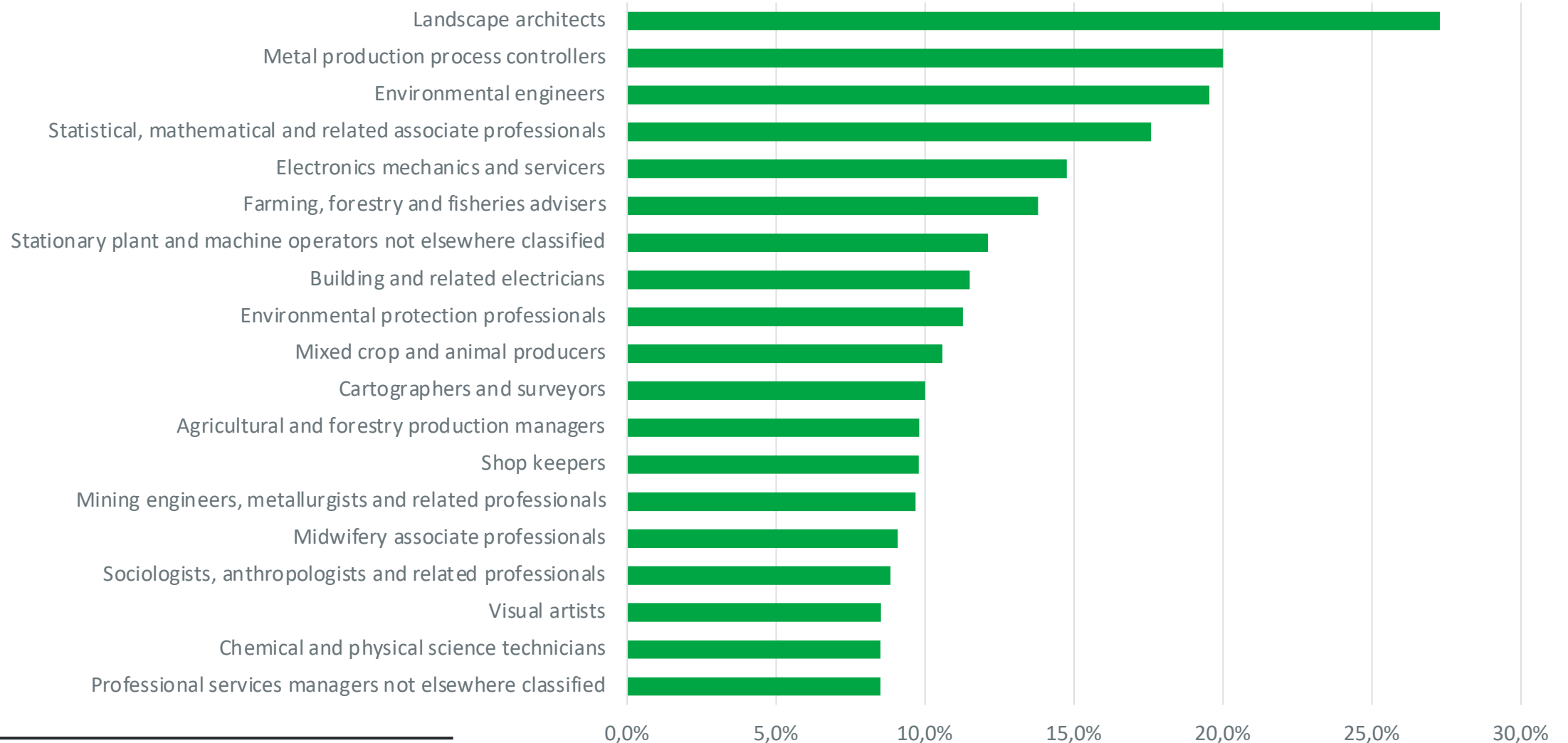


Top 20 Green Skills Kenya (2)



Kenya: green skills by occupation (share)

Kenya - Green share by occupation (data collected: Oct 22- Jul 23)



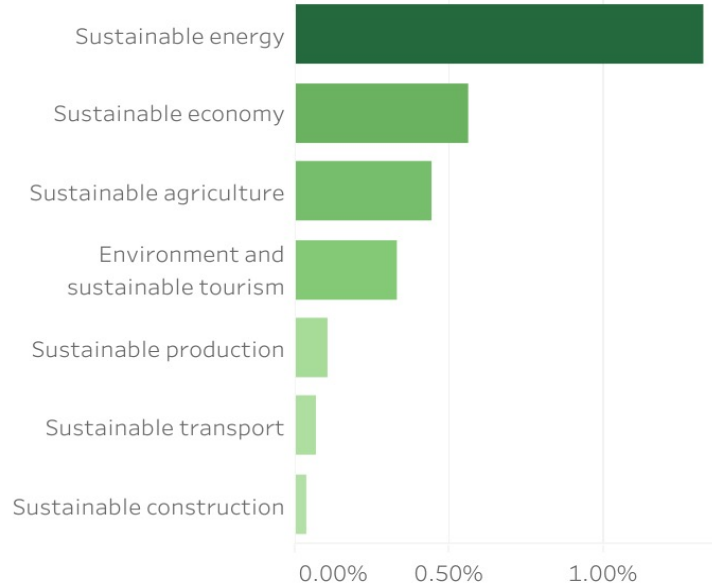
Kenya: Green skills required for selected occupations

Occupation	Green skill	Unique Job postings (Oct 22- Jul 23)
Electronics mechanics and servicers	solar panels	7
	solar energy	2
	environmental protection	2
Environmental engineers	environmental sustainability	32
	environmental protection	19
	sustainable procurement	9
	renewable energy	9
	sustainable business	7
	energy efficiency	7
	sustainable energy	5
	circular economy	4
	development economics	3
	climate smart agriculture	3
	green energy	2
	ecotourism	2
	clean energy	2
	carbon footprint reduction	2
	sustainable agriculture	1
	sustainability performance	1
	iso 14001	1
hydroponics	1	
clean technology	1	
agroforestry	1	
Metal production process controllers	iso 14001	2
Statistical, mathematical and related associate professionals	environmental protection	18
	clean energy	18
	energy efficiency	11
	green building	9
	sustainable materials	6
	sustainable building	6
	sustainable agriculture	6
	renewable energy	5
	circular economy	5
	biomass	4
	agroforestry	4
	sustainable energy	3
	hydropower	1
	biofuels	1

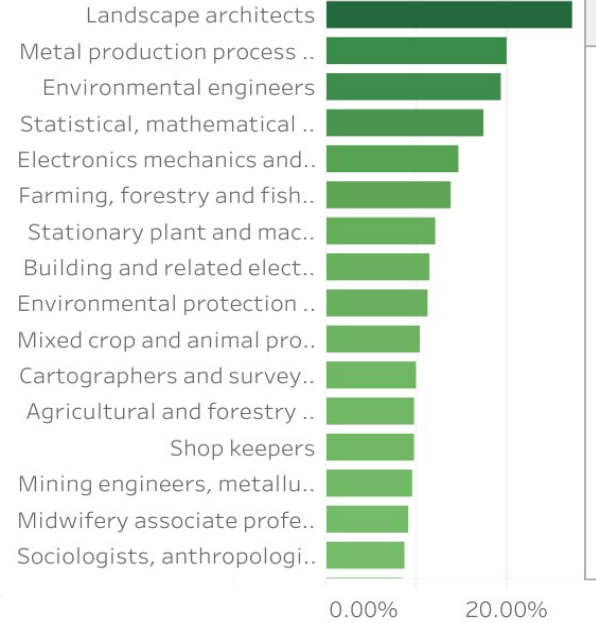
Green Share

2.59%

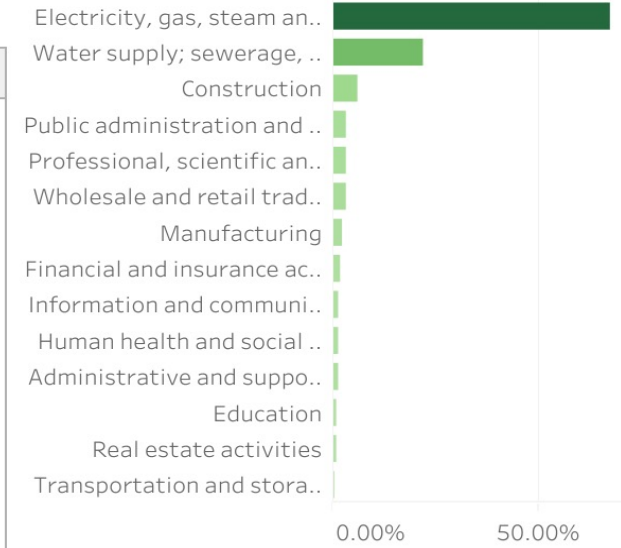
Select the Green skill family that you want to Analyze (then select it again to reset your choose)



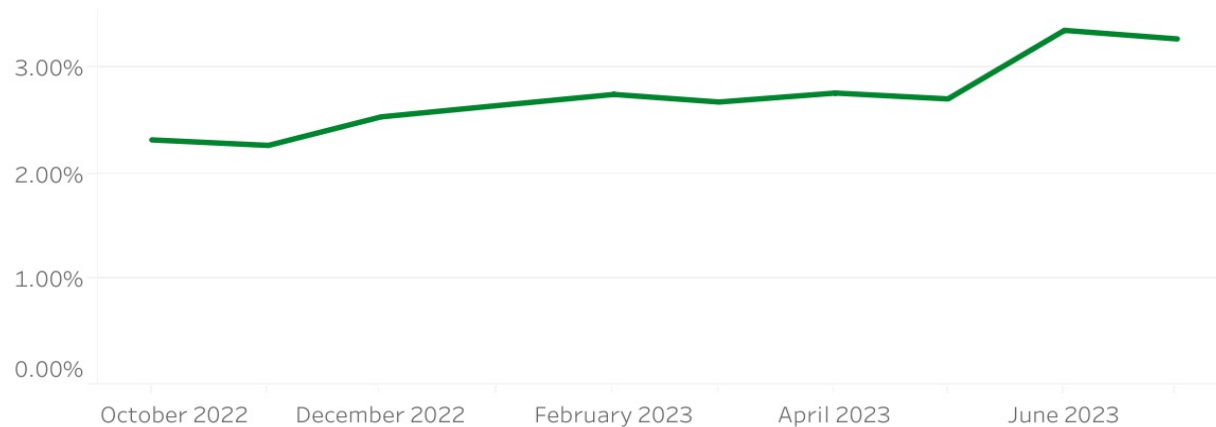
Share of green skill by occupation



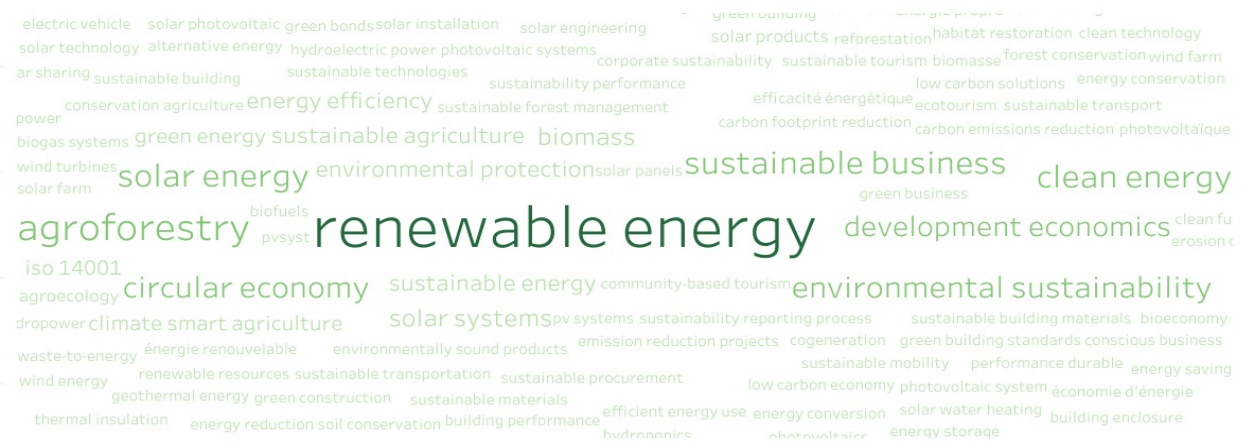
Share of green skill by industry



Share of green skill by release date



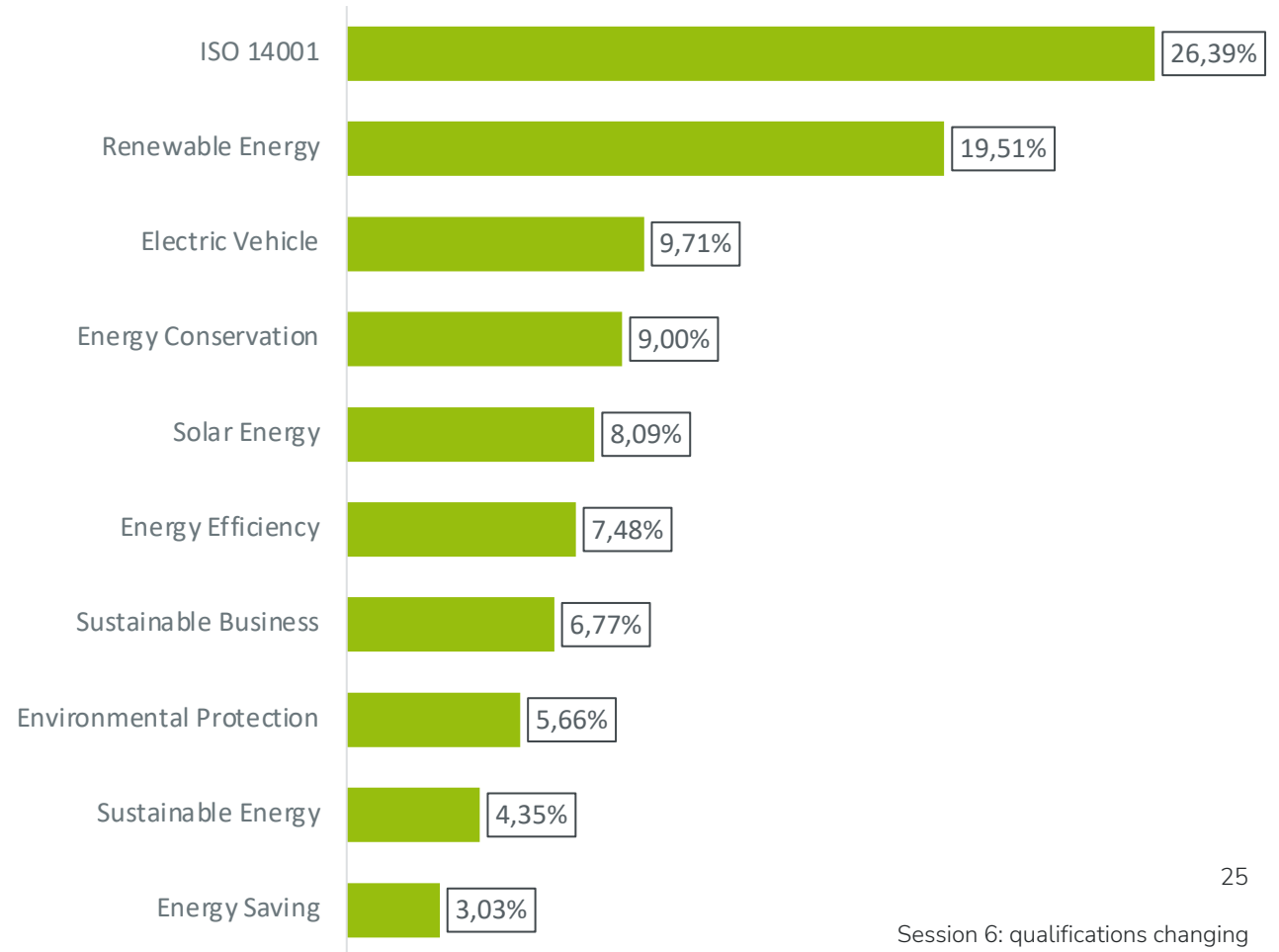
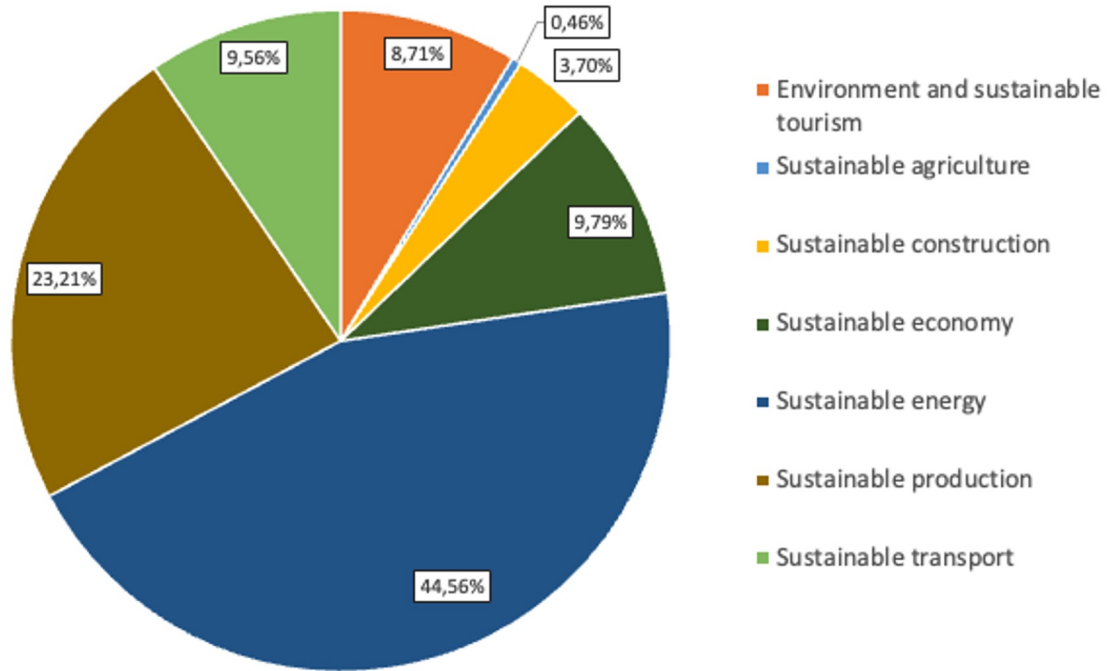
Most requested green skill



Egypt: Green Skills: TOP 10

By Groups –
classification
ETF

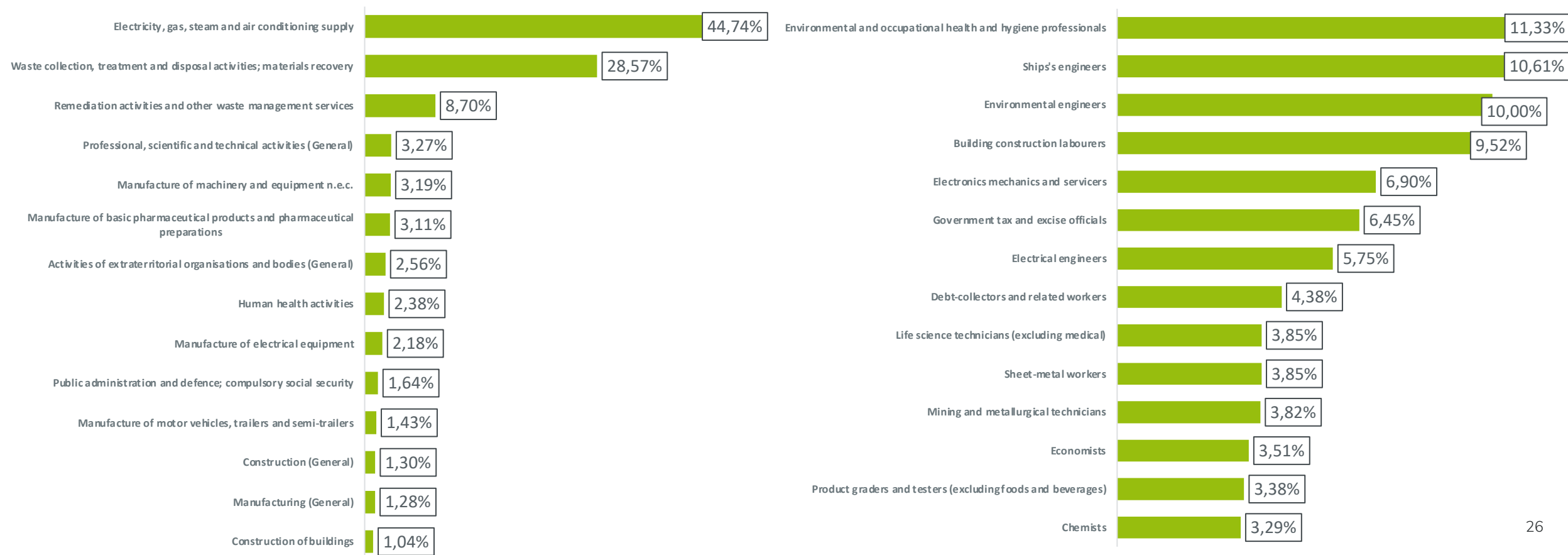
Top Green skills



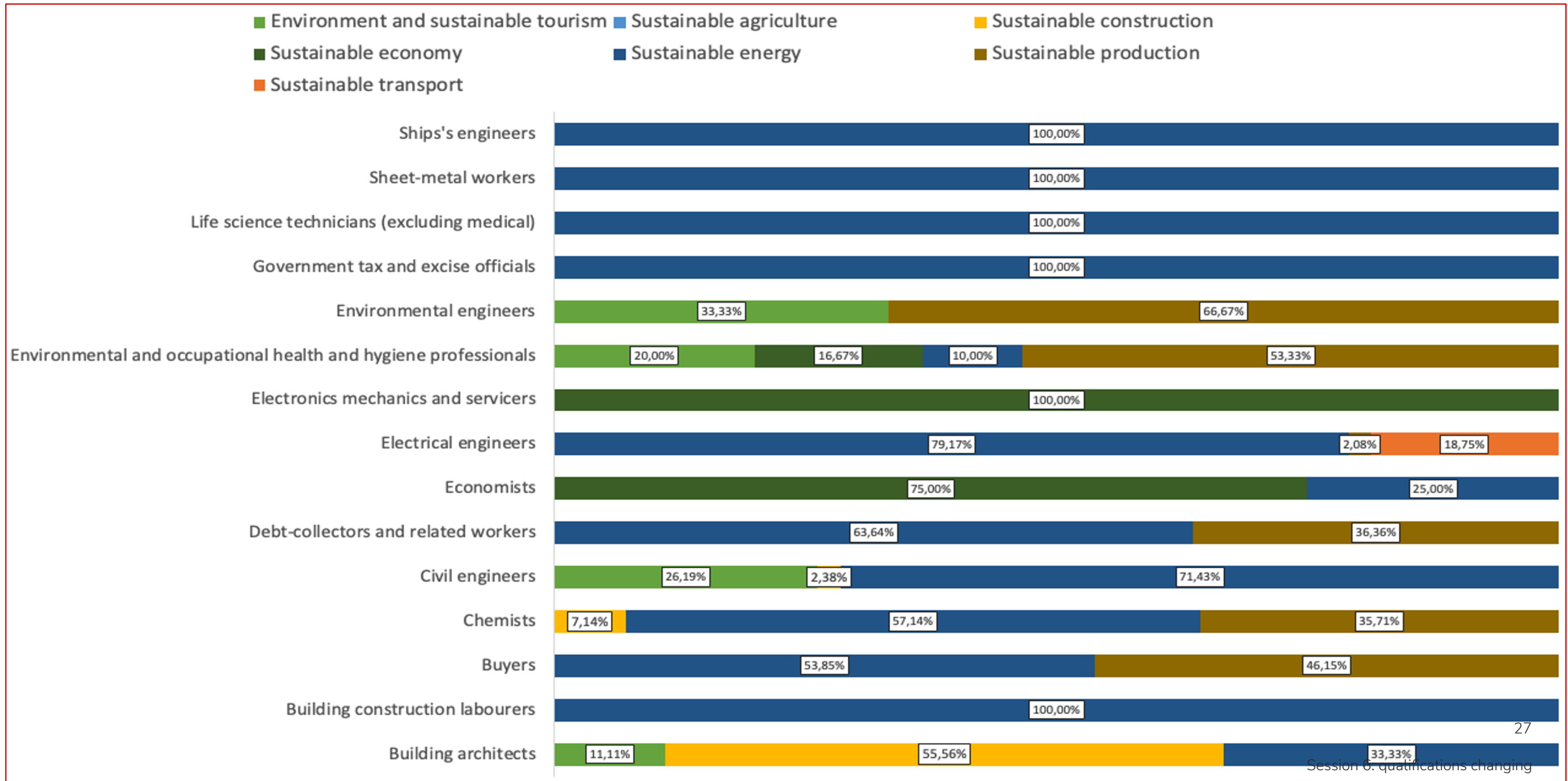
Egypt: Green skills: % by sectors and occupations

Sectors

Professions

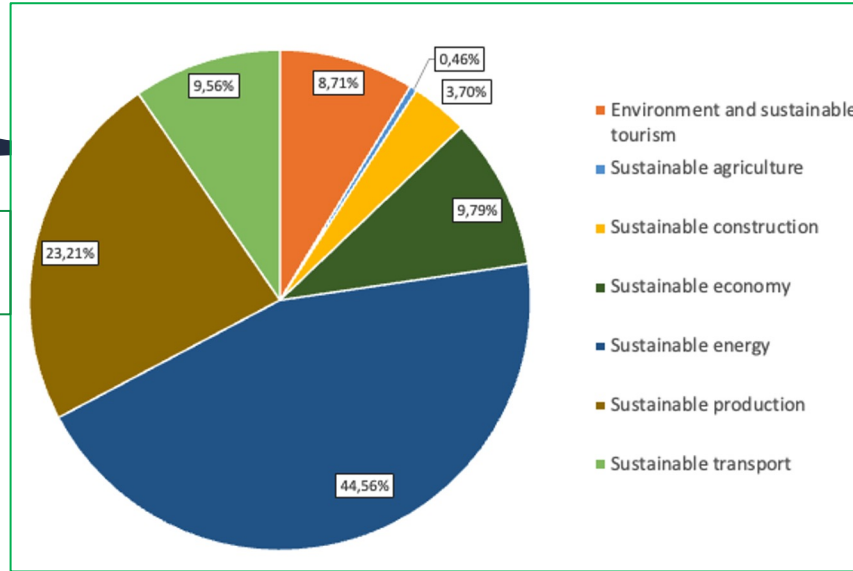


Egypt: Green skills: profiles of the greenest occupations

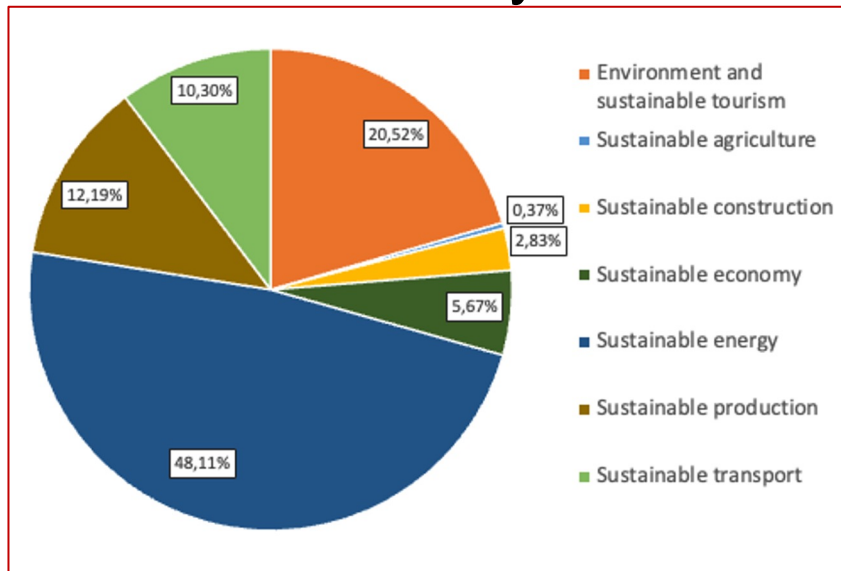


COMPARISONS: % OF GREEN SKILLS BY CATEGORIES

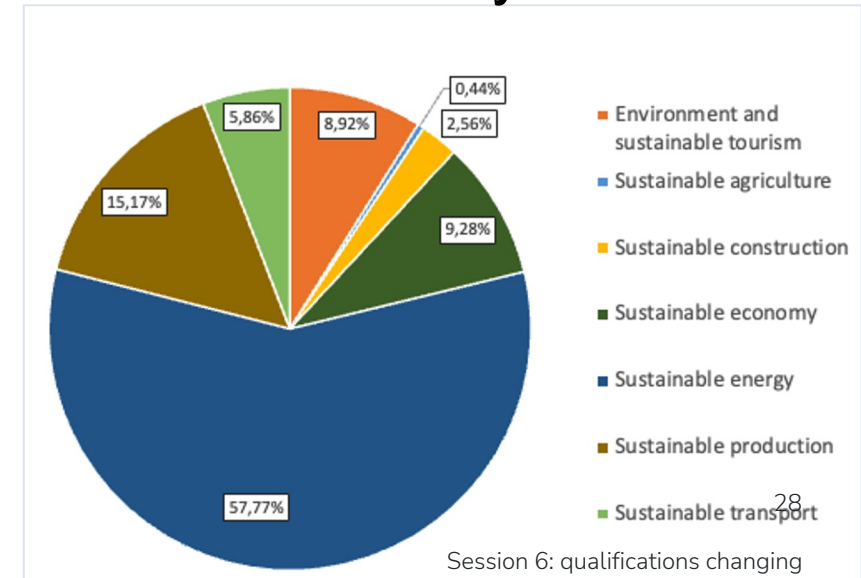
Egypt



Germany



Italy



How about education – qualifications for green skills?

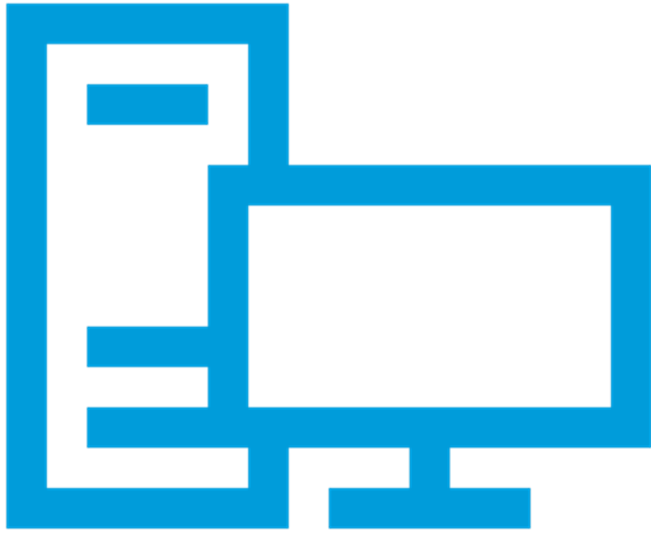
Could you share some examples of your own countries?

Please: Use the colour cards and / or the chat box!

Digital skills – overview of some features of demand



Analysis based on ETF data Job Listings - Egypt

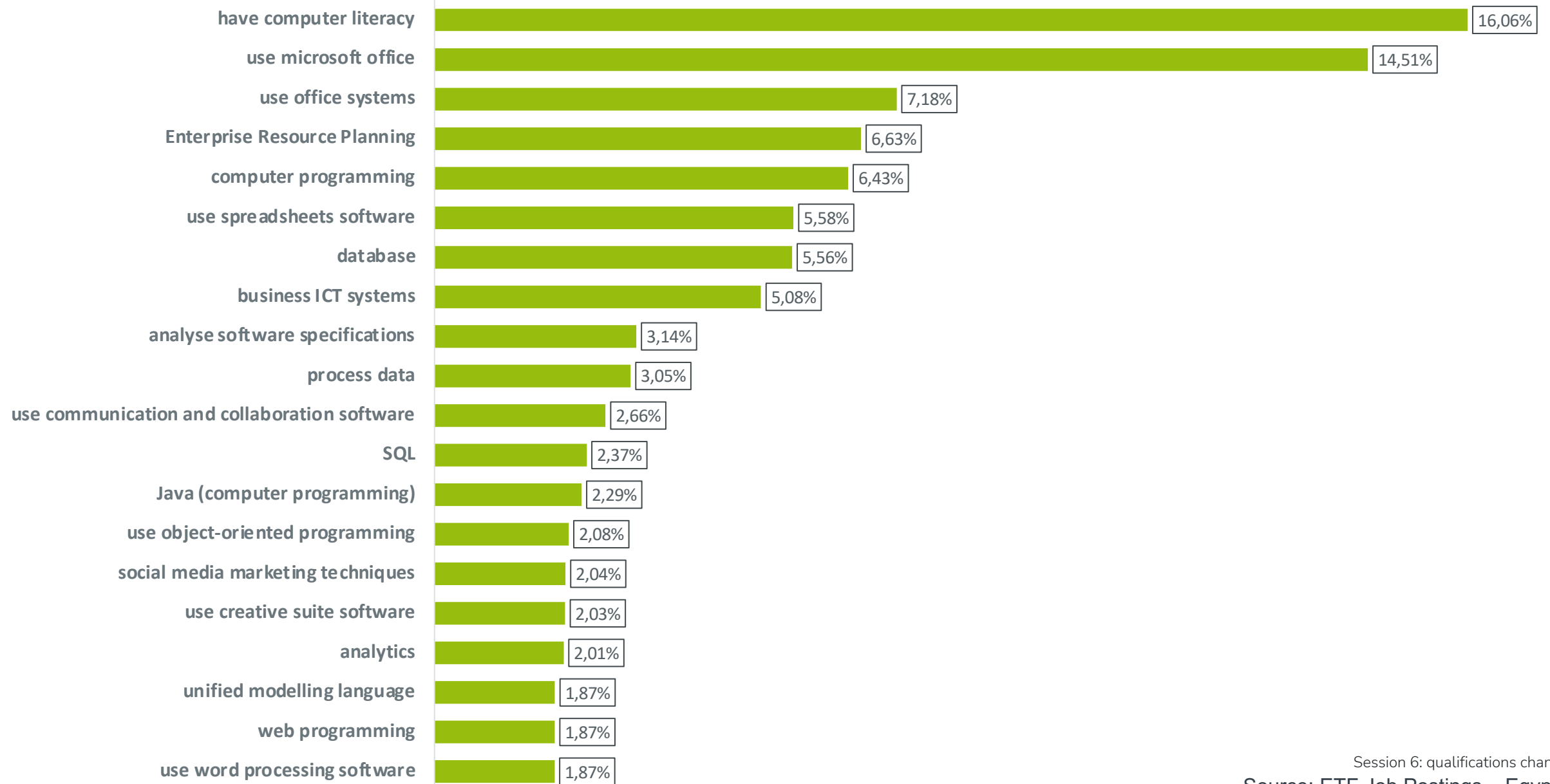


Digital skills

Ability to use digital technologies confidently, critically and responsibly and engage with them for learning, at work and for participation in society.

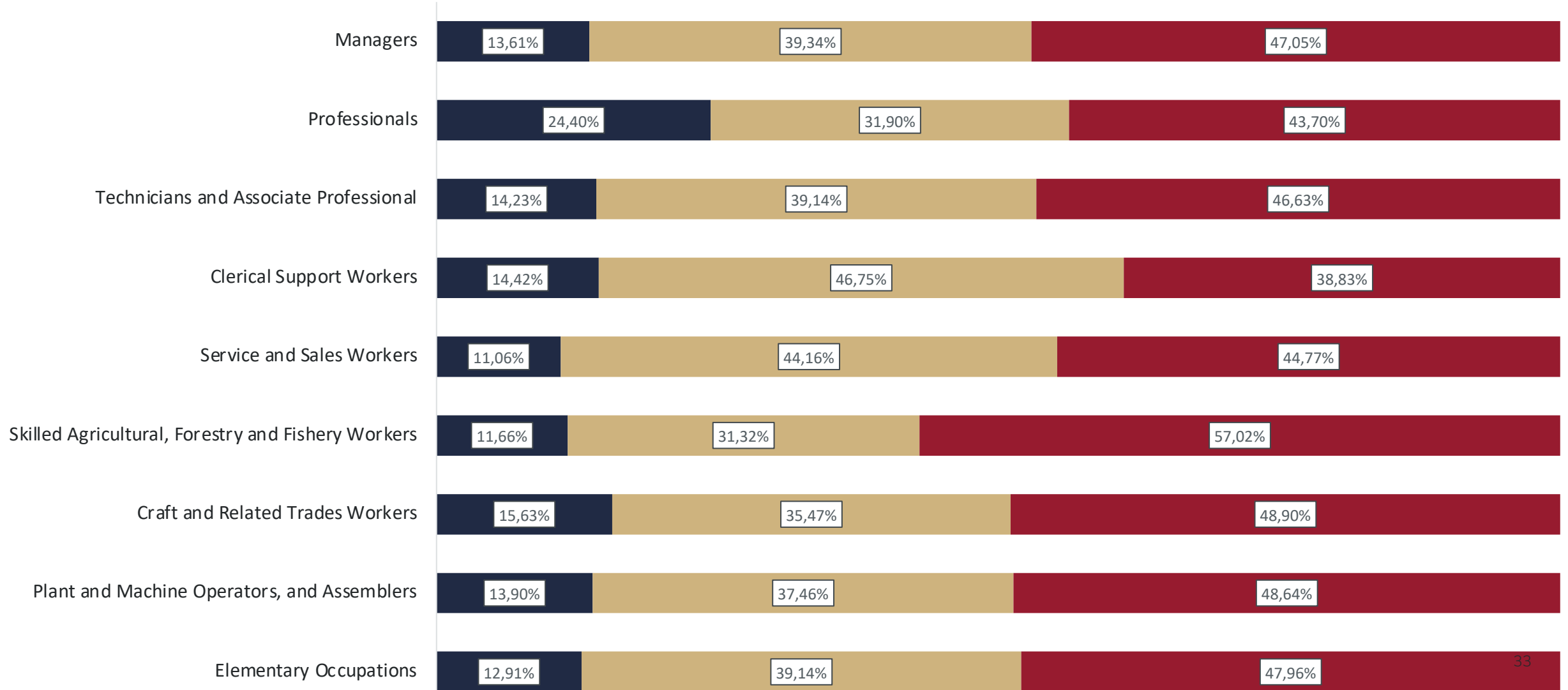
It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including coding), security (including digital wellbeing and cybersecurity-related skills), intellectual property issues, problem-solving and critical thinking.

Egypt: DIGITAL SKILLS: TOP 20



DIGITAL SKILLS: BY ISCO GROUPS (Occupations)

■ Digital skills rate ■ Soft skills rate ■ Occup-specific skills rate



DIGITAL SKILLS: IN DIGITAL AND NON-DIGITAL OCCUPATIONS

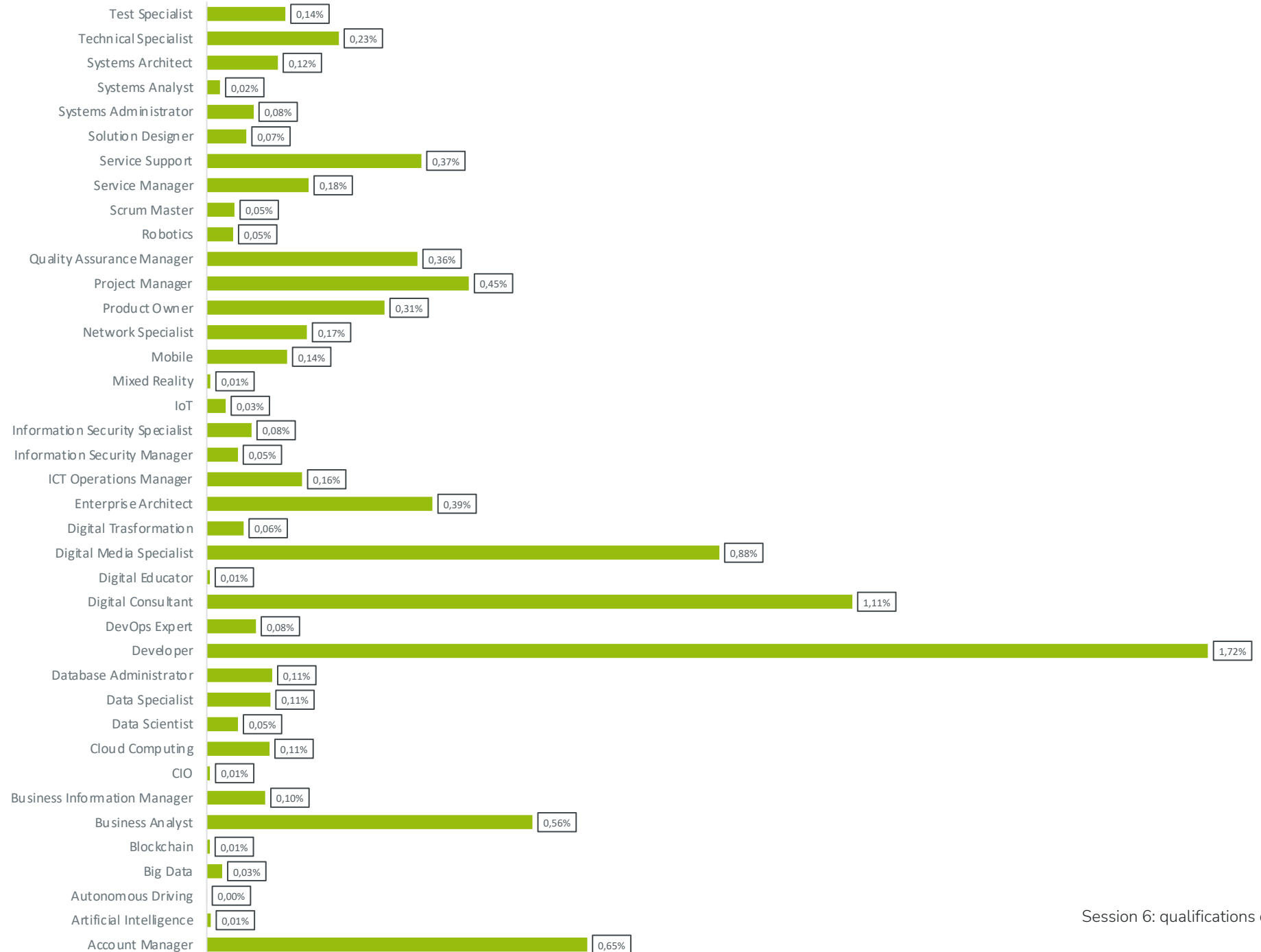
Occupation (ISCO 08)	Unique OJV 2022	Digital skills rate	Soft skills rate	Occupational-specific non digital skills rate
Database designers and administrators	158	54,00%	20,00%	26,00%
Web and multimedia developers	5418	48,00%	23,00%	29,00%
Systems administrators	1366	47,00%	25,00%	28,00%
Applications programmers	1343	44,00%	24,00%	32,00%
Software developers	14752	40,95%	26,32%	32,73%
Data entry clerks	351	40,13%	30,64%	29,23%
Mathematicians, actuaries and statisticians	174	39,08%	28,53%	32,38%
Database and network professionals	1780	38,77%	26,57%	34,66%
Computer network professionals	397	38,29%	29,08%	32,63%
Systems analysts	6593	28,64%	33,62%	37,74%
Graphic and multimedia designers	3686	25,39%	25,93%	48,69%
General office clerks	2022	21,92%	44,19%	33,89%
Environmental engineers	58	19,53%	36,15%	44,31%
Business services and administration managers	1785	15,78%	40,38%	43,84%
Personnel and careers professionals	4122	15,77%	39,97%	44,26%
Accounting and bookkeeping clerks	240	11,88%	33,99%	54,13%
Handicraft workers in textile, leather and related materials	2022	19,75%	31,85%	48,41%

ICT profiles

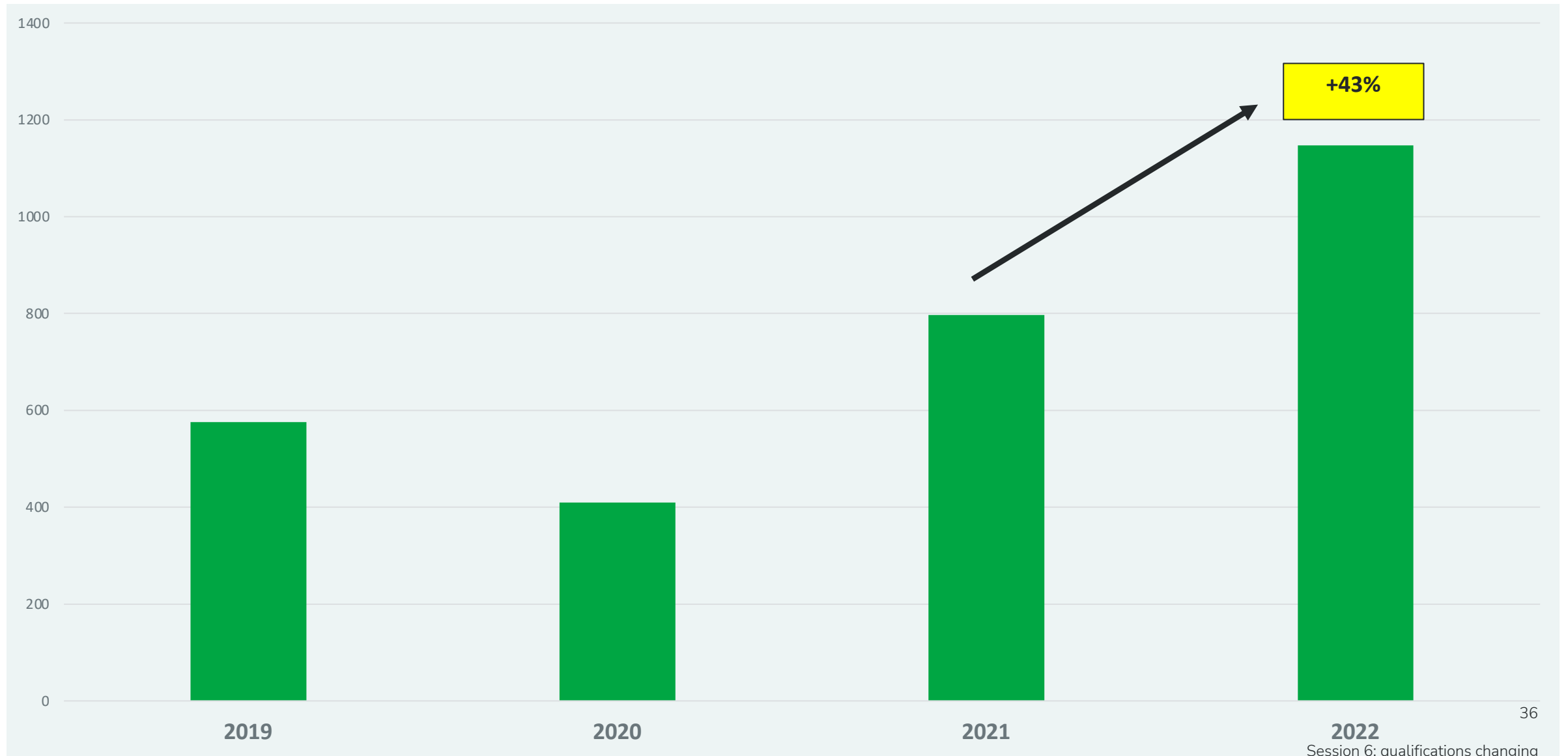
CEN-SENELEC

(UNIQUE OJV)

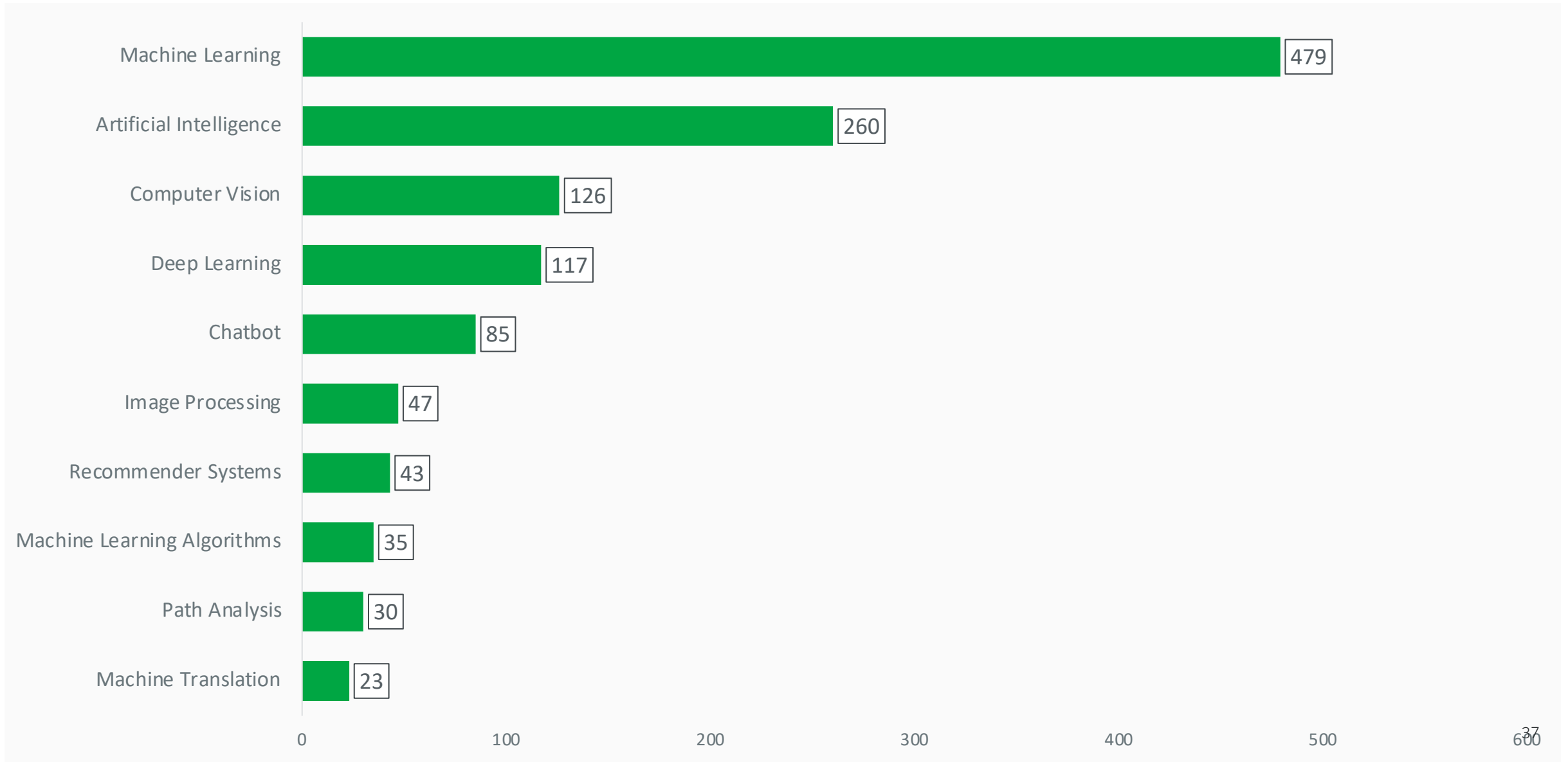
Source: ETF Job Postings – Egypt 2022



Demand for AI skills: growth (time for AI literacy)?



TOP AI skills: from online job vacancies



04

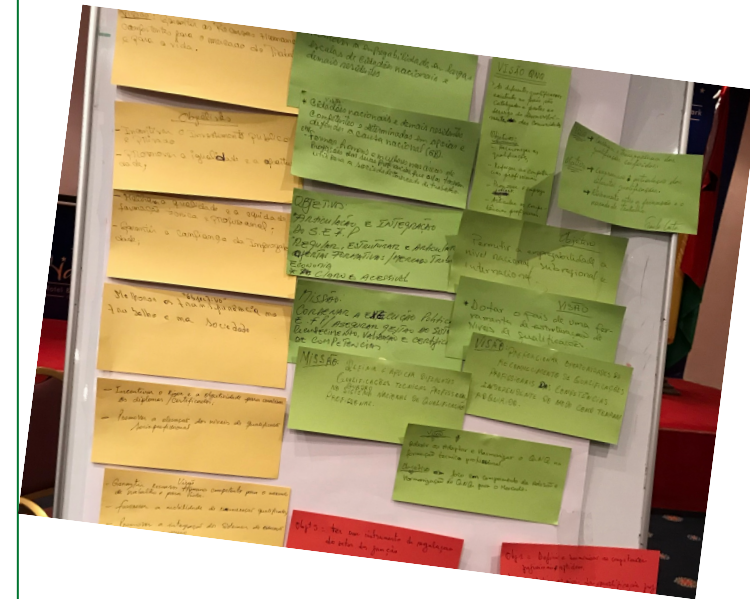
Micro-credentials

The number and diversity of micro-credential offerings has expanded substantially in recent years, accelerated by the onset of the COVID-19 pandemic.

A large part of all employees will need reskilling and the urgency of getting people back to work gives new momentum to “micro-credentials”, which hold **promises and challenges**.

The **common understanding** on the role and potentialities of micro-credentials in the era of digital learning and economy is central to the debate. Countries, regional communities and international organisations globally are deploying initiatives to clarify the state-of-play and develop policies and measures to better contextualise micro-credentials. Ex.: UNESCO, EU, Australia, African countries (Erasmus+ project, ACQF)

- Existing definitions (from OECD, European Commission, UNESCO, Australian Government) point to key characteristics of micro-credentials:
 - ✓ Referring to learning over a limited time and/or in a specific area
 - ✓ May form part of or add to formal qualifications
 - ✓ Potentially 'stackable' over time, adding to individual learning careers
 - ✓ Given their limited size and focus, more flexible than traditional qualifications
 - ✓ Based on assessed learning
 - ✓ Frequently delivered in a digital form.



Global debate towards common definition of micro-credentials (UNESCO and partners)

- In 2019-2021 UNESCO promoted a global debate towards a common definition of micro-credentials, based on extensive expert consultation, analysis of definitions from 15 countries and literature review. The key proposals and underpinning reflection were discussed in September at an international conference (UNESCO, 2021). **The author of the report (Oliver, 2021) concludes “When it comes to micro-credentials, micro is the distinguishing feature, but to be accepted and trusted, micro-credentials must be seen to bear the quality hallmarks of credentials”.**
- Credentials verify, validate, confirm, or corroborate a person’s learning achievements, knowledge and preparedness for performing tasks. Credentials are diverse with regard to their scope, status and purpose.
- A large subset of credentials can be referred to as **macro-credentials**: degrees, diplomas, certificates and licences, often awarded by accredited, recognised or regulated educational and other institutions or organisations. They indicate learning achievement of a broad body of knowledge, transferable skills or technical proficiency and may take a number of years to complete.
 - Purposes: personal or general educational advancement; qualifying to practice a particular profession or to follow a particular career path.

Micro-credentials: proposed definition

Another large **subset of credentials** can be referred to as **micro-credentials: focused on a specific set of learning outcomes in a narrow field of learning and achieved over a shorter period of time.**

Micro-credentials are offered by commercial entities, private providers and professional bodies, traditional education and training providers, community organisations and other types of organisations.

While many micro-credentials represent the outcomes of more traditional learning experiences, others verify demonstration of achievements acquired elsewhere, such as in the workplace, through volunteering, or through personal interest learning. Micro-credentials are often promoted as an efficient way to upskill workers across the lifespan.

- **The proposed definition (Oliver, 2021) states that a micro-credential:**

1. Is a record of focused learning achievement verifying what the learner knows, understands or can do;
2. Includes assessment based on clearly defined standards and is awarded by a trusted provider;
3. Has stand-alone value and may also contribute to or complement other micro-credentials or macro-credentials, including through recognition of prior learning; and
4. Meets the standards required by relevant quality assurance.

Potentialities of micro-credentials

Micro-credentials are one of the **big movements** in education and training.

The should be at **service of Big Ideas**, rather than being considered the Big Idea...

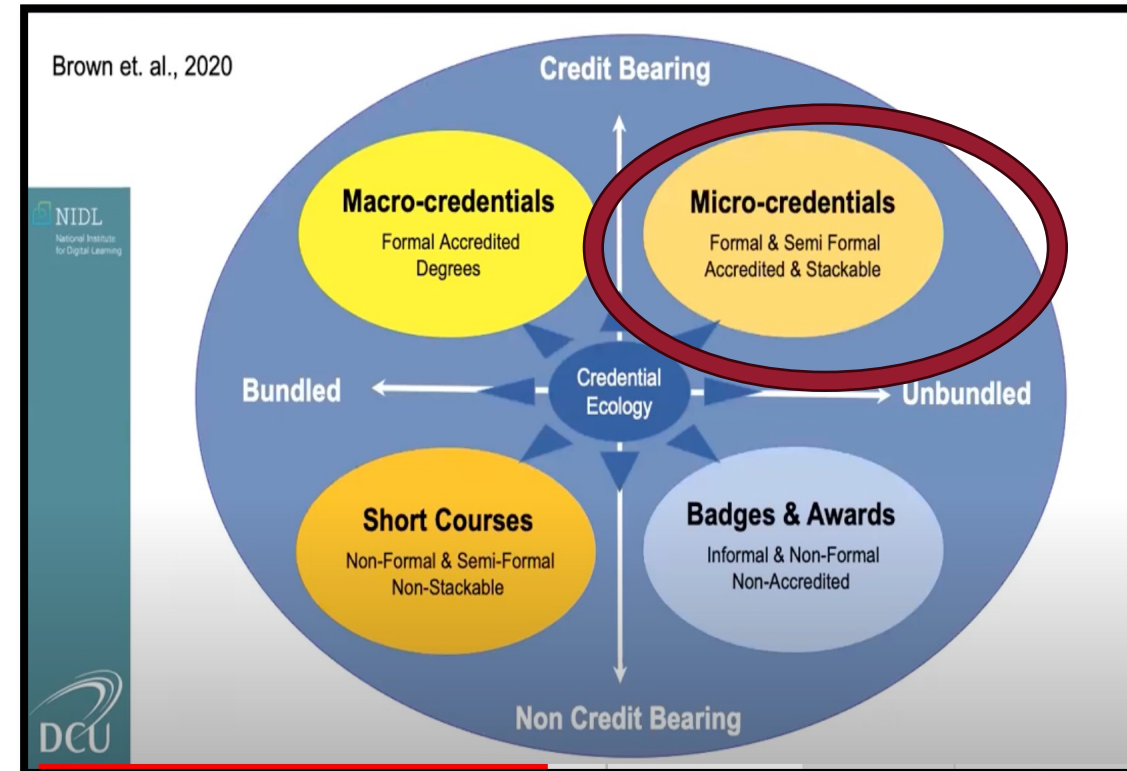
Micro-credentials can help **certify the outcomes of small, tailored learning experiences**.

They make possible the **targeted, flexible acquisition of knowledge, skills and competences** to meet new and emerging needs in society and the labour market and make it possible for individuals to fill the skill gaps they need to succeed in a fast-changing environment, while not replacing traditional qualifications.

They can, where appropriate, complement existing qualifications, providing added value while not undermining the core principle of full degree programmes in initial education and training.

Micro-credentials could be designed and issued by a variety of providers in different **learning settings** (formal, non-formal and informal learning settings)

Credential ecology: quadrants



[Access the video](#)

Mike Brown, MC Observatory

Micro-credentials

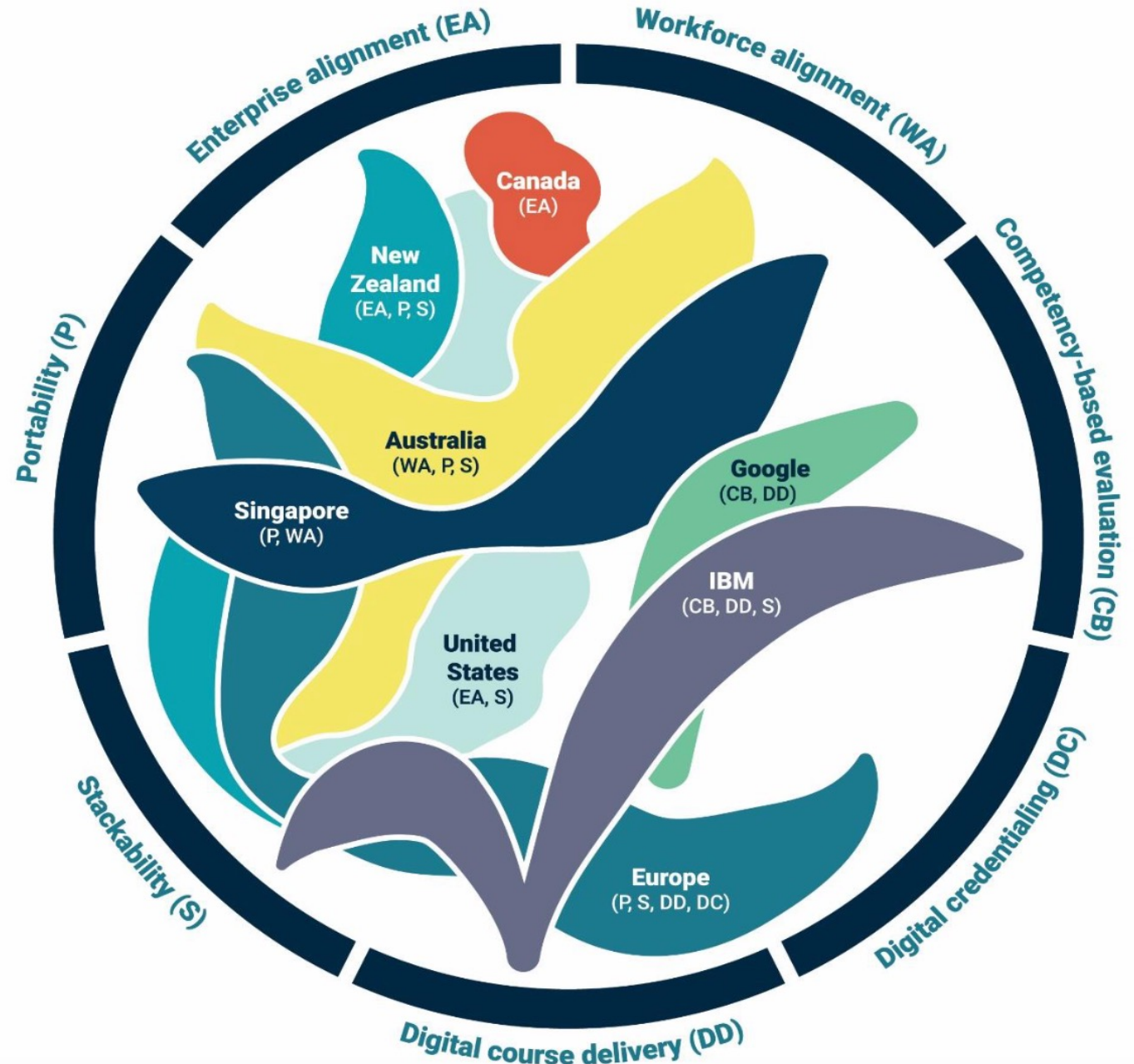
Stylized version: how different micro-credential regimes aim to incorporate varying sub-sets of the **seven qualities**.

- **Note: Stackability is a common feature for US, NZ, A, EU, IBM**

Approaches to Stackability of Micro-credentials Options for Ontario, Prepared for Ontario Council on Articulation and Transfer, March 2023

https://www.oncat.ca/sites/default/files/media-files/r2246_micro-credentials_final_report_21-3-23.pdf

The Seven Qualities of Microcredentials



OECD: Contexts in which Micro-credentials are expected to play a role

 Upskilling and reskilling

 Employability

 Lifelong Learning

 More flexible, learner-centred education

 Access to and completion of education and training

 Student international mobility

 Social inclusion

 Active citizenship and well-being

OECD, 2023. Micro-credentials for Lifelong Learning and Employability: Uses and Possibilities: <https://www.oecd-ilibrary.org/docserver/9c4b7b68-en.pdf?expires=1683402111&id=id&accname=guest&checksum=EC532C674B9D2AB9D69D7DB18202E488>

Way forward for governments

- Micro-credentials do not deliver on their potential automatically.
- For micro-credentials to play a role in enhancing learners' employability, facilitating access to higher education, improving degree completion, and promoting social inclusion, **policymakers need to make interventions to steer and support learners and providers.**

1

Micro-credential initiatives need clarity about their purpose and target population if they are to be effective in achieving their goals

2

Funding support for micro-credential learners and providers should be sustainable and ensure micro-credentials remain accessible to all

3

Achieving the full potential of micro-credentials will require changes to quality assurance and academic recognition policies

4

Information provision for learners needs to go beyond the development of an online information portal to reach a wider population

5

Public policies can encourage collaborations between education and training providers and industries in micro-credential development and delivery

OECD, 2023. Micro-credentials for Lifelong Learning and Employability: Uses and Possibilities: <https://www.oecd-ilibrary.org/docserver/9c4b7b68-en.pdf?expires=1683402111&id=id&accname=guest&checksum=EC532C674B9D2AB9D69D7DB18202E488>

Australia National Micro-Credential framework

The Australian Government (2021) adopted the [National Micro-Credentials Framework](#), which uses the following definition:

- A micro-credential is a certification of assessed learning or competency, with a minimum volume of learning of one hour and less than an Australian Qualifications Framework (AQF) award qualification, that is additional, alternate, complementary to or a component part of an AQF award qualification.

What can constitute a micro-credential?

- TVET skill sets or units of competency.
- Modularised, assessed components of existing higher education curriculum or subjects.
- Industry learning that is assessed (such as vendor certifications, professional learning).
- Other forms of assessed learning or competencies (e.g. Vocational Education/Higher Education /Industry courses not currently accredited by a regulatory authority, and those by other providers).

What does not constitute a micro-credential?

- Unassessed learning or courses, including work-integrated learning without an assessment.
- Badges which are obtained through participation only (i.e. without an assessment).
- Formal qualifications within the AQF and macro-credentials, including diplomas, certificates and master's degrees.

Australia: National Micro-credentials Marketplace

- <https://www.microcredseeker.edu.au/>
 - **Microcred Seeker: “The new way to get ahead”**
 - Goal: Seek, explore and compare courses (tertiary education and training providers)
- Course levels – according to Dreyfus model:
 - ✓ Novice
 - ✓ Advanced beginner
 - ✓ Competent
 - ✓ Proficient
 - ✓ Expert

EU: Recommendation on European approach to micro-credentials for LLL and employability: 10 principles

“Use micro-credentials, where appropriate, as a tool to strengthen and complement existing learning opportunities, increase participation in lifelong learning”

1. Quality
2. Transparency
3. Relevance
4. Valid assessment
5. Learning pathways

6. Recognition
7. Portability
8. Learner-centred
9. Authentic
10. Information and guidance

<https://www.nzqa.govt.nz/nzqf/search/microcredentials.do>

The screenshot shows the NZQA website's search interface. At the top, there is a navigation bar with the NZQA logo, a search bar, and buttons for 'Contact us' and 'Login Options'. Below the navigation bar, there are menu items: HOME, QUALIFICATIONS & STANDARDS, NCEA, MĀORI & PASIFIKA, PROVIDERS & PARTNERS, INTERNATIONAL, and ABOUT US. The main content area is titled 'Register of NZQA-approved Micro-credentials'. It features a search form with a 'Keyword' field and a 'Developer name or Education Organisation number' field, and a 'Search' button. Below the search form, a yellow banner indicates '336 results found. Displaying the first 200 only. Please refine your search, if required.' A table of results is displayed below the banner, showing columns for Title, Level, Credits, Developer, Approval Date, and Review Date. The first five results are visible in the screenshot.

336 results found. Displaying the first 200 only. Please refine your search, if required.

Title	Level	Credits	Developer	Approval Date	Review Date	
ADAS ROV Technician (Micro-credential)	4	10	Omne Marine Training Centre Limited	08/2022	01/08/2023	⏪
ADAS SSBA 50m Offshore Supervisor Trainee (Micro-credential)	6	10	Omne Marine Training Centre Limited	08/2022	01/08/2023	⏪
ADAS Scuba 30m ADAS Occupational Scuba Diver (Micro-credential)	4	33	Omne Marine Training Centre Limited	07/2022	27/07/2023	⏪
AWS re/Start (Micro-credential)	5	40	Te Pūkenga - New Zealand Institute of Skills and Technology	03/2021	12/12/2023	⏪
Aeronautical Engineering Fundamentals (Micro-credential)	3	30	Te Pūkenga - New Zealand Institute of Skills and Technology		19/03/2024	⏪
Aeronautical Maintenance Fundamentals (Micro-credential)	3	30	Te Pūkenga - New Zealand Institute of Skills and Technology	03/2022	19/03/2024	⏪
Applied Payroll (Micro-credential) (Level 5)	5	15	Te Pūkenga - New Zealand Institute of Skills and Technology	08/2020	05/08/2023	⏪
Aquatic Fish Industry Skills (Micro-credential)	3	40	Bay of Plenty Technical Institute Limited	12/2021	07/12/2023	⏪
Asbestos Management and Surveying (Micro-credential)	4	10	CC Training Academy Limited	03/2022	31/03/2023	⏪
Assess and Review HACCP Requirements in a Food Processing Operation (Micro-Credential)	5	20	Te Pūkenga - New Zealand Institute of Skills and Technology	10/2020	18/10/2023	⏪
Assist with Dairy Farming Mating, Calving and Neonatal Care (Micro-credential)	3	30	Te Pūkenga - New Zealand Institute of Skills and Technology	11/2020	17/10/2023	⏪
Assist with Management of Livestock Health and Biosecurity (Micro-credential)	3	20	Te Pūkenga - New Zealand Institute of Skills and Technology	11/2020	31/10/2023	⏪
Assist with Milk Harvesting and Optimising Milk Quality (Micro-credential)	3	30	Te Pūkenga - New Zealand Institute of Skills and Technology	11/2020	31/10/2023	⏪

336 micro-credentials in online register. With NQF level (3 to 8). Credits: 5-40...

Example: "Excavator Operator" micro-credential – NZQA register

Excavator Operator (Micro-credential)	3	29	Besafe Training Limited	22/09/2023	▼
<p>Aim</p> <p>The aim of this micro-credential is to train skilled operators to operate and manage hydraulic excavators on construction sites, so that they are able to place materials with minimal spillage, stock-pile and other related activities in accordance with company and industry standards including health and safety legislation.</p> <p>This micro-credential targets excavators' operators who are employed with no formal training or qualification. It will also enable learners to meet the Construct Safe Tier 2 Health and Safety Competency Test for excavators.</p> <p>Learners will be assessed against unit standard 17310 and must complete an "WTR" endorsement training (unit standards 16701, 16702, 16703) that is pre-requisite for operating excavator to successfully graduate from this micro-credential.</p> <p>Outcome</p> <ul style="list-style-type: none"> Operate a special-type vehicle safely and legally by obtaining an W, T or R Licence endorsement Apply excavation health and safety regulations in accordance with company and job requirements Perform site and excavator checks Operate excavator to load, unload, stock-pile, strip, and trim materials Perform special lifting and post-operational procedures <p>Education Organisations that can deliver this Micro-credential</p> <p>Besafe Training Limited</p>					

Ireland: micro-credentials in the NFAQ

Micro-credentials are incorporated at every level of the Irish National Framework of Qualifications

They are represented in three different forms:

“Minor Awards” (at any level, outcomes of partially completed “Major Awards” can be awarded).

“Supplemental Awards” (from Level 4 onwards, learning in addition to “Major Awards” can be awarded).

“Special Purpose Awards” (specific achievements can be awarded at any level)

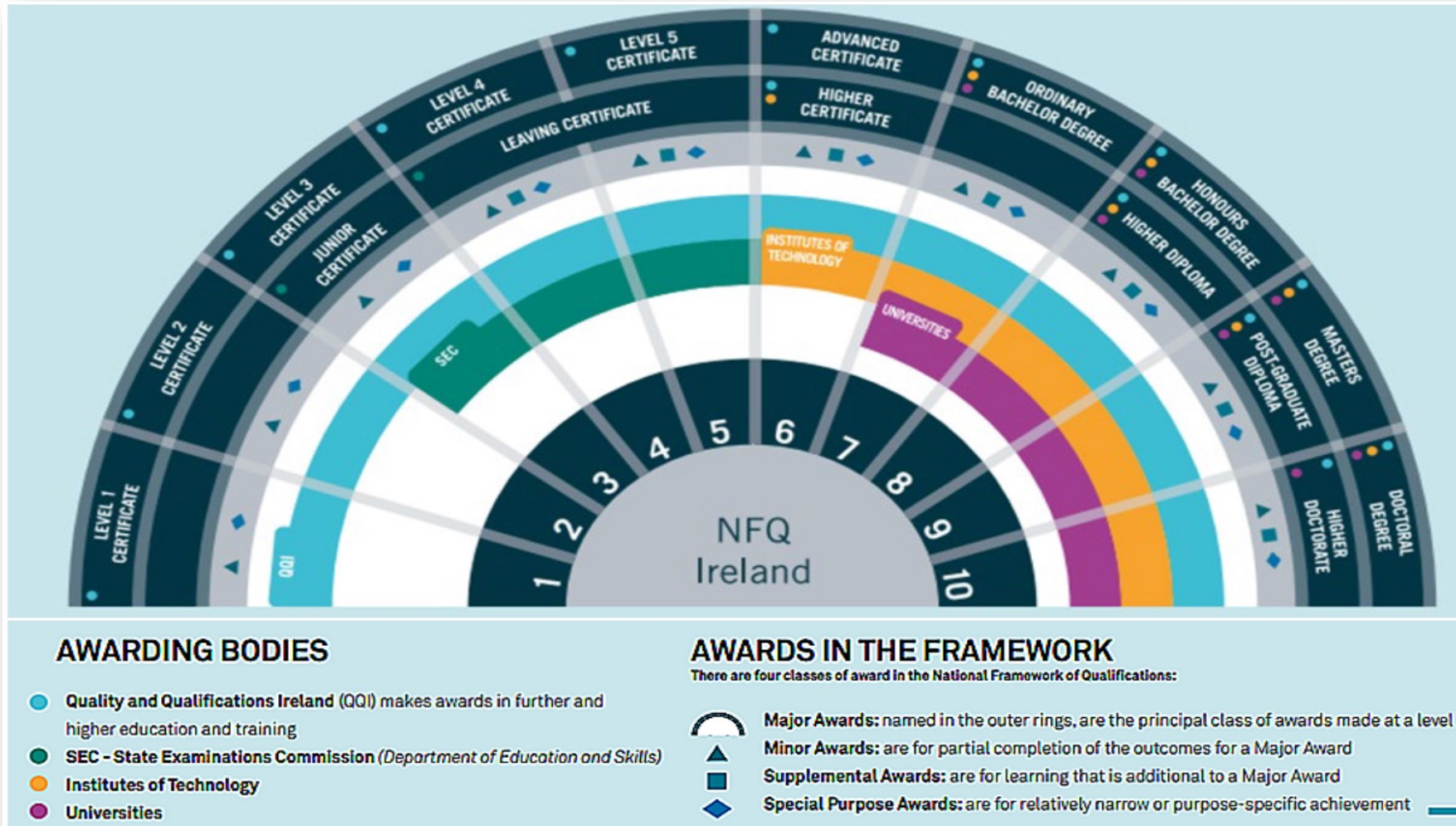


Figure 3: The Irish NQF. Source: Quality and Qualifications Ireland (2021).

Micro-credentials are awarded by universities, institutes of technologies, other awarding bodies, the State Examinations Commission and Quality and Qualifications Ireland (QQI)¹¹.

Portugal: National Catalogue Qualifications - ANQEP (UFCD)

The screenshot shows the ANQEP website interface. At the top, there are logos for 'CATÁLOGO NACIONAL DE QUALIFICAÇÕES' and 'ANQEP AGÊNCIA NACIONAL PARA A QUALIFICAÇÃO E O ENSINO PROFISSIONAL, I.P.'. Below the logos is a navigation bar with options: 'Qualificações de Dupla Certificação', 'Referencial Básico e Secundário (Adultos)', 'Percurso de curta e média duração', 'Competências Transversais', 'Conselhos Setoriais para a Qualificação', and 'Documentação'. The main content area displays search results for 'UFCD' (Unidade de Formação de Curta Duração). The search results are filtered to show 8669 UFCDs. Three specific UFCDs are listed:

Código	Carga horária	Pontos de Crédito	Descrição
0001	25 horas	2.25	História das artes e da indústria gráfica
0002	25 horas	2.25	Desktop publishing - tratamento de texto e paginação
0003	50 horas	4.5	Desktop publishing - tratamento de texto e imagem

The number '8669 UFCD' is circled in red in the original image. A yellow box at the bottom of the screenshot contains the URL: <https://catalogo.anqep.gov.pt/>

- UFCD: proxy of micro-credentials
- Access: National Catalogue of Qualifications – ANQEP.
- Can be combined into a full qualification.
- UFCD: Volume of learning: 2.25 – 4.5 credit points
- Separate UFCD: does not give a level of qualification.

UFCD: Unidade de Formação de Curta Duração; Unit of Training of Short Duration

Micro-credential Observatory: a great source

The Research Observatory on Micro-credentials (ROM) is a NIDL initiative in partnership with the [ECIU University](#). The aim is to provide a curated and regularly updated collection of major reports, policy initiatives and research-related publications on the growth of micro-credentials in higher education and lifelong learning more generally.

- [NIDL Activities](#)
- [NIDL Research](#)
- [Major Policy Initiatives](#)
- [National & International Reports](#)
- [Useful Reading: Articles, Books & Papers](#)
- [Events, Conferences and Webinars](#)
- [Microcredentials Sans Frontières Network](#)



- Large number of articles published in 2022-2023:
<https://www.dcu.ie/nidl/micro-credential-observatory>

Websites, resources on micro-credentials: open information

- **In NQF registers:**

- New Zealand (NZQA): <https://www.nzqa.govt.nz/providers-partners/approval-accreditation-and-registration/micro-credentials/>

- Register of micro-credentials NZQA: <https://www.nzqa.govt.nz/nzqf/search/microcredentials.do>
- Up to 40 credits – levels 3 to 8 of NQF

- **Portugal: National Qualifications Catalogue:** <https://catalogo.anqep.gov.pt/>
 - 8663 courses of short duration (75-350 hours of learning)

- **Toolkits: Ontario Micro-credentials Toolkit:**

<https://ecampusontario.pressbooks.pub/microcredentialtoolkit/>

Websites, resources on micro-credentials: open information (2)

- **ACQF website:** <https://acqf.africa/resources/micro-credentials>
- **Cedefop:** <https://www.cedefop.europa.eu/en/projects/microcredentials-labour-market-education-and-training>
- **ETF:** Guideline to design, issue and recognise Micro-Credentials. <https://www.etf.europa.eu/sites/default/files/2023-05/Micro-Credential%20Guidelines%20Final%20Delivery.pdf>
- **EU Recommendation 2022:** A European Approach to Micro-Credentials: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2022.243.01.0010.01.ENG
- **New survey:** https://www.holoniq.com/notes/micro-credentials-survey-2023-insights?utm_campaign=Weekly%20Education%20Marketing%20Newsletter&utm_medium=email&_hsmi=257668719&_hsenc=p2ANqtz-9AW9h3XTIKkCALx1MFTX6515BITWs4V5GeO7EdAbCUYOBGELgA3TN43nQjKY7B30_AxaBgAGsBVj7OKaftMoJ4yi8Dvw&utm_content=257668719&utm_source=hs_email

Poll



1. Is the number and diversity of micro-credentials growing in your country / training offer?

- Yes
- No
- We do not have sufficient data
- Perhaps

2. Which sub-sectors / institutions offer short courses providing micro-credentials. Choose as many options as adequate.

- Higher education
- TVET
- Professional associations / bodies
- Large companies
- NGOs
- Schools
- Others

Poll (2)

3. What are the main purposes of micro-credentials in your country?

- Reskilling, upskilling
- Employability
- Articulation
- Access to higher levels of education
- Social inclusion
- Others

4. Micro-credentials and the NQF: does the legislation provide for inclusion of micro-credentials (or proxies) in the NQF / register?

- Yes
- Not
- No, but we are working on it
- I am not sure



AACQF

African Continental

Qualifications Framework



A national qualifications framework (NQF) is 'A policy and instrument for the development and classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims at integrating and coordinating national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society.

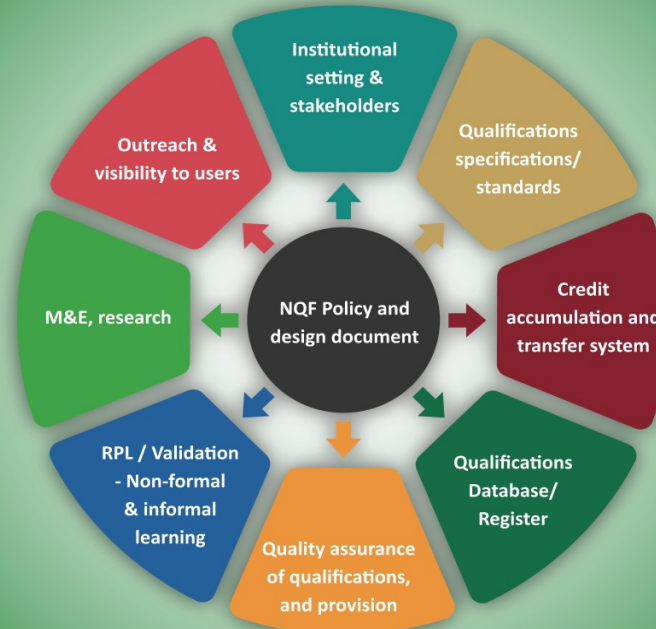
Source: EQF Recommendation

A national qualification system includes all aspects of a country's activity that result in the recognition of learning. These include the means to develop and operationalise national or regional policy on qualifications, institutional arrangements, **quality assurance processes, evaluation and attribution processes, skills recognition** and other mechanisms linking education and training to the labour market and civil society. Qualifications systems can be more or less integrated and coherent. One of the characteristics of a qualification system may be an **explicit qualifications framework**.

Source: OECD, Bridges to Lifelong Learning, 2007

A qualification: means a formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has achieved learning outcomes to given standards.

Source: EQF Recommendation.



Level descriptor: A statement describing learning achievement at a particular level of a Qualifications Framework that provides a broad indication of the types of learning outcomes and assessment criteria that are appropriate to a qualification at that level.

Source: SAQA, NQFPedia

Learning outcomes: Statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence.

Set of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal and informal.

Source: Cedefop

A regional qualifications framework (RQF) is a broad structure of levels of learning outcomes that is agreed by countries in a geographical region.

A means of enabling one national framework of qualifications **to relate** to another and, subsequently, for a qualification in one country to be compared to a qualification from another country.

Source: ASEAN

QRF: ASEAN Qualifications Reference Framework, A Practical Guide and All you Need to Know.