



ÎLE-DE-FRANCE

A case study on green jobs and skills development for people with low qualifications

Île-de-France includes Paris (the capital city) and is the most populated region in France and one of the richest regions in the European Union.¹ Its population in 2021 was 12,213,447 habitants.² At the end of 2021, the employment rate was 67.5 per cent and the unemployment rate was 8.1 per cent.³ Furthermore, for people aged 15 to 24 the employment rate was 32.8 per cent, while for people aged 25 to 49 the employment rate was 82 per cent.⁴

Context

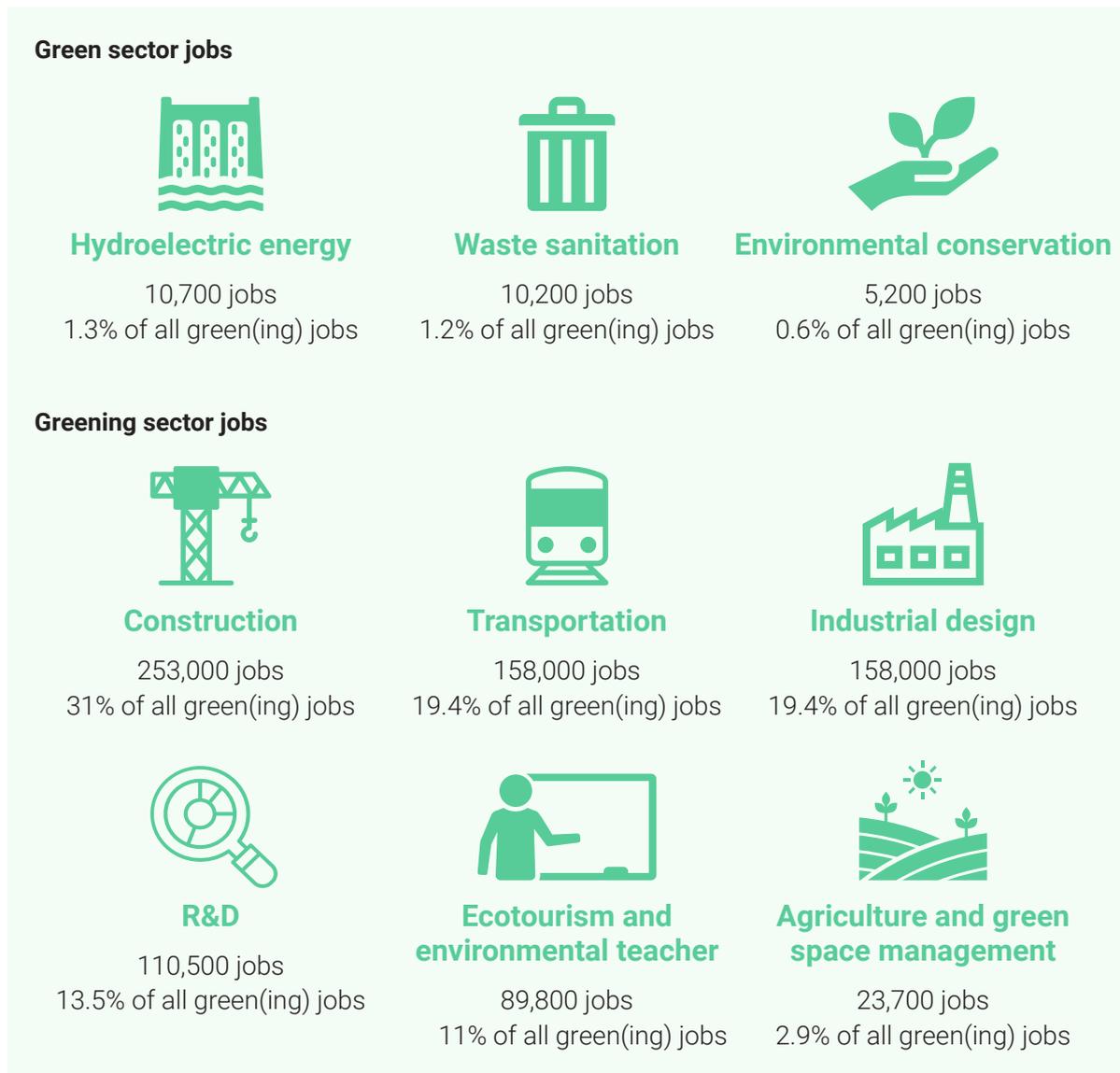
France aims to become Europe's first low-carbon economy.⁵ To successfully reach carbon neutrality, France has introduced the 'France Relance'⁶ COVID-19 recovery plan that will help rebuild the

French economy after the pandemic. This recovery plan represents a €100 bn investment by the national government and European Union (co-financing 40 per cent through the Recovery Plan for Europe).^{7,8} This focuses on three main objectives: ecology, competitiveness and cohesion. With €30 bn allocated to the ecology objective, France will support the development of green hydrogen, and improve mobility and the rail networks. The cohesion objective is also relevant to this research, with €36 bn being invested into training the future workforce. To reduce the gap in inequality, this recovery plan is designed to provide support to young and vulnerable people seeking employment by strengthening vocational training opportunities and strategically training young people in high-growth sectors.⁹

France aims to
become Europe's first
low-carbon economy

Green (and greening) job opportunities

In France, green jobs are categorised into two professions: 'green' professions (*métiers verts*), which are industries linked directly to environmental issues, and 'greening' professions (*métiers verdissants*), which are any industries working towards implementing environmental measures to their work.¹⁰ In Île-de-France in 2018, there were 26,100 'green' professionals and 790,300 'greening' professionals.¹¹ There are about **816,400 'green' and 'greening' jobs** in total in Île-de-France, these are concentrated in nine sectors:¹²



More detailed data showed that between 2008 and 2018, 300 additional jobs were created in Île-de-France in the waste disposal and treatment sectors.¹³ During the same time, the water disposal and treatment sector saw a decrease of 1,100 jobs.¹⁴

Top 'green' occupations in the three main green sectors in Île-de-France are:



Hydroelectric energy:

Hydropower technician, hydroelectric plant operator, hydropower engineer, electrical engineer, mechanical engineer, ICT technician, site inspector.



Waste sanitation:

Sorter, heavy equipment operator, industrial machinery mechanic, welder, driver, landfill site worker, waste management officer, technical assistant.



Environmental conservation:

Environmental technician, park ranger, solar energy installer, environmental planner, natural resource technician, ecologist.¹⁵

Top 'greening' occupations in the six main sectors in Île-de-France are:



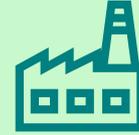
Construction:

Building construction labourer, plumber, electrician, carpenter, building site inspector, civil engineer, building surveyor, boilermaker, dredge operator, insulation worker, landscaper.



Transportation:

Vehicle technician, vehicle mechanic, delivery driver, shipping agent, freight inspector, heavy equipment operator, energy advisor, transport operator.



Industrial design:

Assembly line operator, process operative, factory worker, fitter, manufacturing engineer, production manager, quality assurance.



R&D:

Technical assistant, research assistant.



Ecotourism and environmental teacher:

Tour organiser, environmental education officer, environmental trainer, environmental promotions officer.



Agriculture and green space management:

Grounds person, landscaper, outdoor activities coordinator.¹⁶

The Skills-OVATE¹⁷ data gives insights to job opportunities advertised online. While it does not provide data for green jobs specifically, it provides important context information about the local job market. To focus on occupations suitable for people with low qualifications, we excluded occupations such as professionals, managers or researchers, which likely require a university

degree. The analysis of 172,470 online job advertisements (OJAs) found in Île-de-France (see **Annex A**) shows that the most sought-after occupations were sales workers (11,612 OJAs), science and engineering technicians (11,479), other support clerks (8,873), accounting clerks (7,934), technical labourers (4,350), care workers (4,231), and office clerks (3,385).¹⁸

The specific search for green jobs carried out by RAND Europe (see **Methods**) identified 90 jobs in Île-de-France. All jobs found were in the private sector (90) and were offered either by green employers (meaning those from green industries such as waste management) (64) or other employers (26). None of the 90 adverts provided salary indication. Key sectors included civil engineering (38), architectural activities, technical testing and analysis (34), water collection, treatment and supply (4), and waste collection, treatment and disposal activities (4). Among the main occupations were teaching professionals (26), science and engineering professionals (24), administrative and commercial managers (13), and production and specialised service managers (8).



In regard to potential future job creation, macroeconomic assessment undertaken in 2021 by ADEME projected the creation of 540,000 new green and greening jobs by 2030 across all of France.¹⁹ This could reach up to 1 million jobs by 2050 in the country, more specifically, 30,000 energy sector and 196,000 construction sector new green and greening jobs.²⁰

Anticipating that green jobs will be more present across all sectors of economy and across all occupations in future, Cedefop's EU Skills Panorama forecasts for employment growth are used to identify where more or fewer jobs are expected in general. Occupations suitable for people without tertiary education (i.e. excluding managers, professionals, etc.) with the highest employment growth by 2030 are expected to be elementary workers, and service and sales workers (see **Annex B**).²¹

Skills needed for green jobs



Within **the 'green' professions**, 43 per cent of jobs required manual labour.²² Many of these labour jobs were in waste disposal, water disposal, water treatment and garbage collection. Furthermore, roughly half of 'green' professionals had either Level 1 of National Vocational Qualification or NVQ (*Certificat d'Aptitude Professionnelle*), Level 2/3 (*Brevet d'Etudes Professionnelle*) or no diploma.²³

In **the 'greening' professions** in 2018, 29 per cent of jobs required manual labour, although it was not clear whether these required green skills.²⁴ In the 'greening' sector, 17 per cent of workers had no qualification while 19 per cent had a NVQ (National Vocational Qualification) Level 1 (*Certificat d'Aptitude Professionnelle*) or NVQ Level 2/3 (*Brevet d'Etudes Professionnelle*). The most prominent greening sectors were construction (32 per cent of 'greening' jobs), transport (20 per cent) and industry (20 per cent).²⁵

The analysis of skills in the Skills-OVATE²⁶ data for Île-de-France shows that the most frequently sought by employers were soft skills, namely attitudes, communication, collaboration and creativity, assisting and caring, or generic programmes and qualifications.²⁷ This is not surprising as these skills are applicable across sectors and occupations that would require different technical or sector-specific skills (see **Annex A**).²⁸



The analysis of green jobs identified by RAND Europe shows that many job adverts (49 out of 90) required two years or more of required experience. The most common minimum qualification needed in job adverts was a university degree (67 out of 90) followed by a technical qualification (15 out of 90). However, these requirements were heavily tied to civil engineering jobs (38 out of 90) and architectural jobs (34 out of 90). Jobs in waste and water treatment (8 out of 90) required civil engineering experience. This reflects both the employment structure in Île-de-France and the overrepresentation of some sectors in OJAs. In relation to skills, very few listed advertisements explicitly required green skills and those that did ask for knowledge of environmental topics and issues (14 out of 90), knowledge of water management (8 out of 90) or knowledge of aspects of sustainable building (7 out of 90). Other skills sought after by employers included knowledge related to natural sciences, mathematics or statistics (66 out of 90), engineering, manufacturing or construction (56 out of 90), or agriculture, forestry, fisheries and veterinary activities (11 out of 90).

Training and education provision for green skills



France is focused on the ecological transition that will be ongoing during the next decades. There are calls from private and public authorities for education and vocational training to be more accessible and continuously adapted throughout this transition.²⁹ Therefore, the focus of the French Ministry of Ecological Transition³⁰ is two-fold: 1) increase the accessibility of training to bring in new workers into the sectors; and 2) support the already established workers throughout their professional career in adapting to the evolution of green and greening sectors.³¹

The Ministry of Ecological Transition³² and the Ministry of Labour³³ have developed a toolkit that promotes and supports professional transition into green or greening sectors. The toolkit³⁴ helps: 1) identify skills acquired and better understand the skills needed to bridge skills gaps in different sectors; 2) find career paths for employees and jobseekers; and 3) identify transferable skills. Employees or job seekers can utilise this tool to support their transition from a weakened sector towards jobs in the ecological and sustainable energy sectors.³⁵

Common in France are job integrated companies (*entreprises d'insertion*) also referred to as Work Integration Social Enterprises (WISEs).³⁶ If individuals are struggling to join the workforce and in need of further training and support, these companies provide professional experience with technical, personal or social learning opportunities.³⁷

Examples of such companies are:

- *La Petite Reine*³⁸ specialises in eco-delivery around Paris with electrically assisted bicycle and electric vehicles. They aim to promote access to employment and support to their employees by setting personal aims (e.g. regarding household budgeting or housing) and professional objectives related to gaining experience, skills or qualifications.³⁹
- *Tricycle*⁴⁰ focuses on supporting people into and keeping them in employment. Their specialist is on industrial waste collection and recycling. They work with the federation of WISEs (previously the National Committee on Work Integration Enterprises)⁴¹ (*la fédération des entreprises d'insertion*) to support and develop the employability of men, women and seniors struggling to find employment.⁴²

Key qualifications for the green and greening sectors between a ten-year period was examined by INSEE (see Table 1).⁴³

Table 1. INSEE figures on qualifications for the green and greening sectors in 2008 and 2018⁴⁴

Qualifications	Green sector		Greening sector	
	2008	2018	2008	2018
No qualifications	29.4%	22.3%	22.4%	16.4%
NVQ qualifications	25.2%	21.5%	22.5%	19.5%
European Baccalaureate	13.4%	15.3%	14.4%	15.5%
Undergraduate degree or equivalent	10.6%	11.3%	11.5%	10.4%
Masters or above	21.4%	29.6%	29.2%	38.2%

Educational and training providers that offer opportunities for green skills development are also present in the region. Many green sector qualifications, such as NVQ levels for recycling or agriculture, are done through non-green specific training organisation. Examples of these educational organisations are *CAMPUS 93*,⁴⁵ *Association vecteur*⁴⁶ and *Centre de formation Saint Philippe*.⁴⁷

Alternatively, there are some organisations that only focus specific green skills. An example of this is *Fédération Ecoconstruire*.⁴⁸ This organisation aims to create qualifications for eco-construction in collaboration with employers. They also have two training pathways with a longer course allowing individuals to understand more detailed techniques and a shorter pre-qualification course that can establish a pathway to other professional qualifications in eco-construction.⁴⁹

*ETRE*⁵⁰ is an association that raises awareness and educates at risk young people aged 16 to 25 in ecological transition professions such as eco-construction, urban agriculture, bicycle repair and other skills related to the greening economy. The fundamental principles of this association are to learn by doing through workshops and collective projects. They also tailor support for each young person welcomed into the programme.

Relevant stakeholders and interventions

Within Île-de-France, over 50 stakeholders were identified in relation to green jobs and green skills. These can be grouped into three main types. The first are **local government organisations**, such as the Regional Energy-Climate Agency (*Agence régionale énergie-climat*)⁵¹ or the Regional Observatory for Waste (*Observatoire Régional des Déchets*),⁵² that aim to assess the state of environmental issues, monitor its development and raise public awareness of relevant issues. The second type are **WISEs** in the green or the greening economy, such as *Bati're*⁵³ or *Energies9*.⁵⁴ These companies offer vulnerable groups employment and support according to their needs. Many of these employers focus on either cleaning, recycling, refurbishment or green space maintenance within the green economy. The third type of stakeholders are **private employers**

such as *AECOM*,⁵⁵ *Ares*,⁵⁶ *CSTB*,⁵⁷ *Moulinot*,⁵⁸ *Recnorec*⁵⁹ and *Saur*⁶⁰. These mostly focus on waste disposal, recycling, clean energy and engineering consultancy.

There are also other stakeholders, such as **education and training providers** (e.g. *ETRE*,⁶¹ *Federation-Ecoconstruire*,⁶² *Collectif Réfugiés*⁶³ and *Paroles Voyageuses*),⁶⁴ **employment services** (e.g. *Alliance Villes Emploi*⁶⁵ and *Emploi Environnement*)⁶⁶ and **civil society organisations** (e.g. *Confédération des Métiers de l'Environnement*⁶⁷ and *INEC*).⁶⁸



WISEs and training opportunities were the types of intervention helping vulnerable groups into green jobs or green skills in Île-de-France. The majority of training was for blue collar jobs, such as green space maintenance or waste or recycling collection and disposal. All of these employment and support opportunities were open to anyone struggling to find employment (see below).



RéaVie

WISE that reuses building materials to reduce waste. They integrate low-qualified workers into the green sector by offering them training and employment. This company also raises public awareness of waste-related issues through workshops.⁶⁹



Moulinot

WISE specialising in collecting and sorting food waste from around Paris. They then transform their collection into compost and/or digestate so it can be sold back to farmers. Moulinot also hosts a 40-day biowaste training course for those seeking employment in the sector.⁷⁰



Tricycle Environment

WISE working in the circular industry to promote waste management. It aims to help unskilled workers find work and access training in the waste and recycling industry.⁷¹



Ecodair

WISE reducing the environmental footprint and consumption by refurbishing computers and computer parts while training and reintegrating people into sustainable employment.⁷²

Summary conclusion

- France is investing to become a carbon neutral economy. Under the 'France Relance' initiative, €30 bn will be allocated to reach carbon neutrality by supporting the development of green hydrogen and improving infrastructure and rail networks.
- The 'green' professions in France include industries linked directly to environmental issues (e.g. waste disposal, water disposal and water treatment). Of these green jobs, 43 per cent involved manual labour with roughly half of 'green' professionals having either an NVQ Level 1 (*Certificat d'Aptitude Professionnelle*), NVQ Level 2/3 (*Brevet d'Etudes Professionnelle*) or no diploma.
- The 'greening' professions are any industries working towards implementing environmental measures (e.g. construction, transport and industry). Of these greening jobs, 29 per cent required manual labour and about 17 per cent of workers had no qualification and further 19 per cent had a NVQ Level 1 (*Certificat d'Aptitude Professionnelle*) or NVQ Level 2/3 (*Brevet d'Etudes Professionnelle*).
- The local governments and other stakeholders (including WISEs, *entreprise d'insertion*) help transition the workforce to the green and greening economy by providing reskilling and upskilling opportunities.

Methods

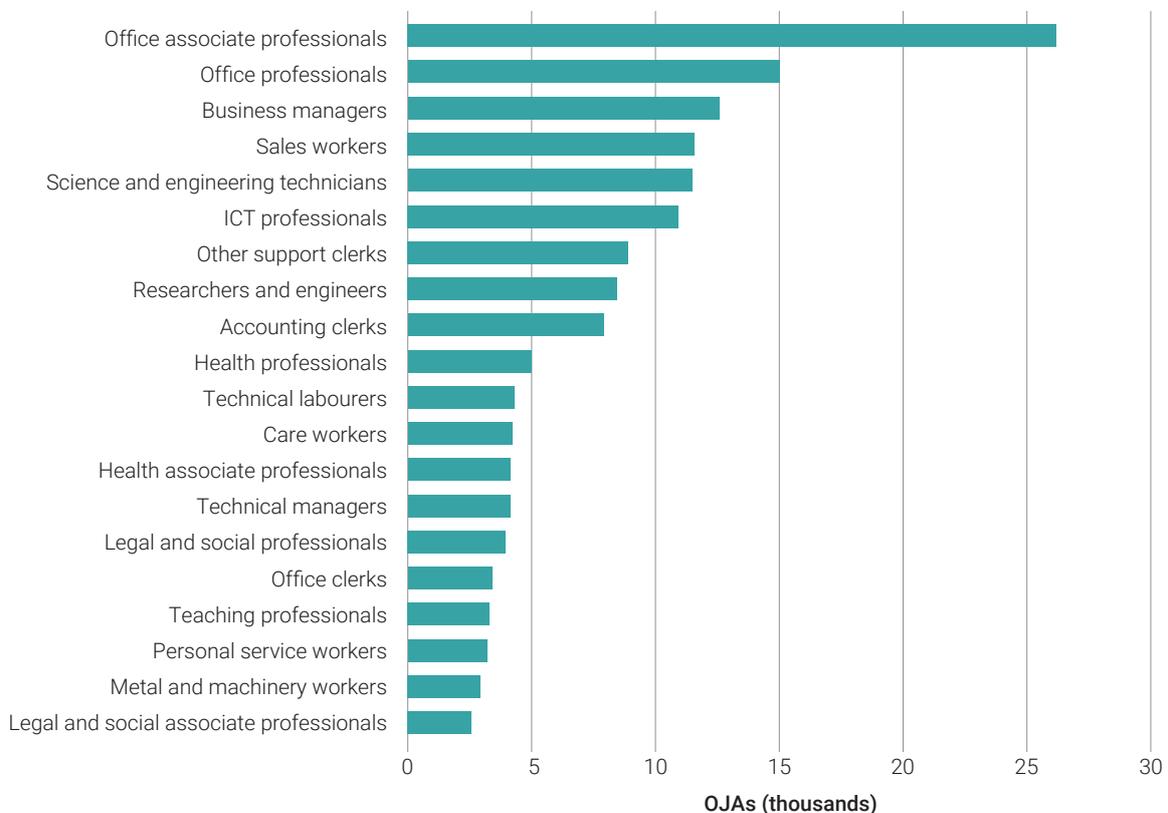
1. **Targeted documentation review:** The review followed a protocol that spelled out the search terms, inclusion and exclusion criteria (see details in the final report).⁷³ The full list of sources consulted is presented in **Notes and References**.
2. **Analysis of EU Skills Panorama data:** The analysis included Cedefop projections of future employment growth across all sectors and occupations, as well as the changes in the level of education expected in France by 2030. The dataset uses NACE Rev. 2 (statistical classification of economic activities) and International Standard Classification of Occupations (ISCO-08).

- 3. Analysis of Skills-OVATE data:** The database provided by Cedefop collates OJAs from multiple sources, including private job portals, public employment service portals, recruitment agencies, online newspapers and corporate websites. The dataset uses NACE Rev. 2 (statistical classification of economic activities) and classification of European Skills, Competences, Qualifications and Occupations (ESCO). In December 2021, there were 172,470 OJAs in the Skills-OVATE database for Île-de-France covering the period from the third quarter of 2020 to the second quarter of 2021. The database does not allow filtering out green job vacancies or opportunities only for people with low qualifications. OJAs do not reflect the market demand for jobs across all occupations and sectors equally well: some sectors or professions are overrepresented if they are more likely to advertise online, while others are underrepresented.
- 4. Online search for green jobs and data analysis:** The search of www.emploi-environnement.com conducted on 23 September 2021 identified 90 green job advertisements in Île-de-France. Data was extracted, coded and cleaned. Descriptive statistics was used to analyse the results.

Annex

Annex A. Analysis of Skills-OVATE data

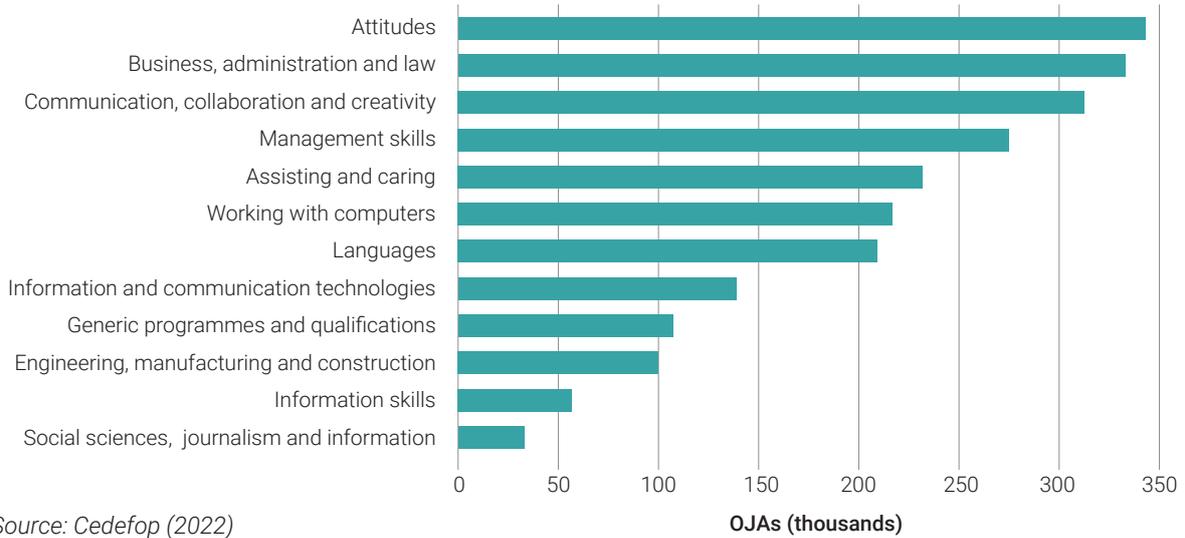
Figure 1. Online job advertisements (OJAs) per occupation (Île-de-France)



Source: Cedefop (2022)

Note: Cut-off point is the median of OJAs per occupation (2,550).

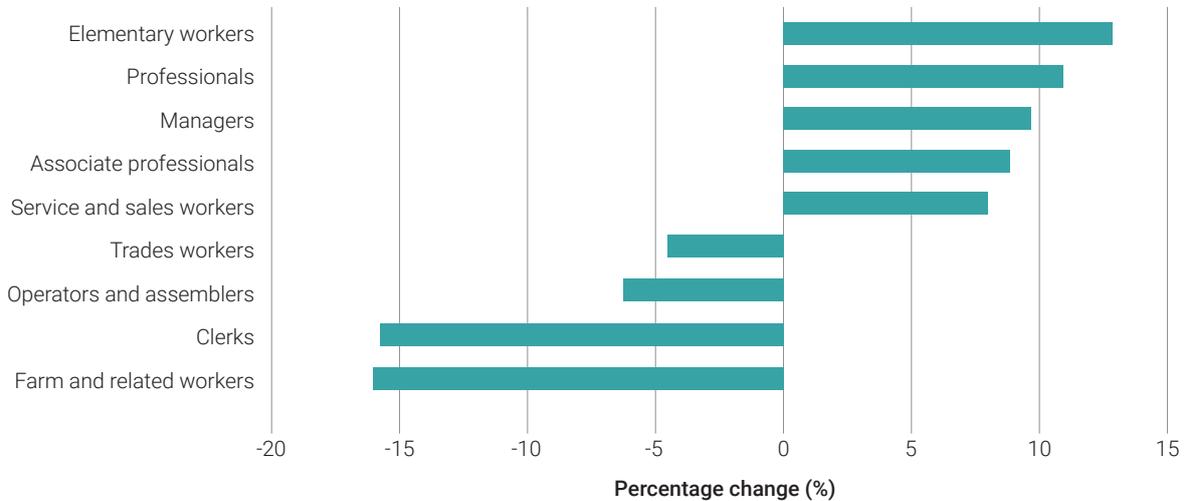
Figure 2. Most requested skills – level 3 ESCO (Île-de-France)



Source: Cedefop (2022)
 Note: Cut-off point is the median of OJAs per skill (33,459).

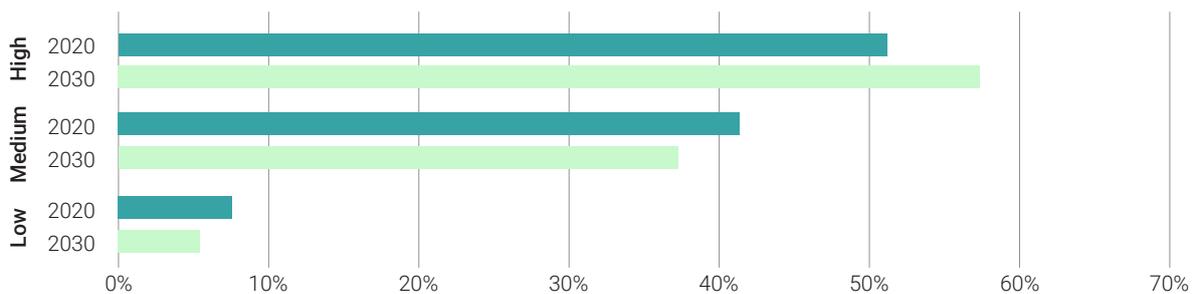
Annex B. Analysis of EU Skills Panorama data

Figure 3. Future employment growth (% change) across occupations in France in 2020–2030



Source: Cedefop (2021)

Figure 4. Current and projected future employment demand for educational level possessed in France



Source: Cedefop (2021)

Notes and References

- 1 Larousse. 2022. 'Île-de-France.' As of 26 July 2022: <https://www.larousse.fr/encyclopedie/region-france/%C3%8Eile-de-France/124799>
- 2 Conseil régional d'Île-de-France. 2021. '12.213.447 habitants en Île-de-France au 1er janvier 2021.' 15 January. As of 26 July 2022: <https://www.iledefrance.fr/12213447-habitants-en-ile-de-france-au-1er-janvier-2021>
- 3 Insee. 2021. 'Au troisième trimestre 2021, le taux d'emploi est au plus haut (67,5 %) et le taux chômage est quasi stable (8,1 %).' 19 November. As of 26 July 2022: <https://www.insee.fr/fr/statistiques/5871518>
- 4 Insee. 2021. 'Au troisième trimestre 2021, le taux d'emploi est au plus haut (67,5 %) et le taux chômage est quasi stable (8,1 %).' 19 November. As of 26 July 2022: <https://www.insee.fr/fr/statistiques/5871518>
- 5 Ministère de l'Europe et des Affaires étrangères. 2022. 'France Relance recovery plan: building the France of 2030.' As of 26 July 2022: <https://www.diplomatie.gouv.fr/en/french-foreign-policy/economic-diplomacy-foreign-trade/promoting-france-s-attractiveness/france-relance-recovery-plan-building-the-france-of-2030/#:~:text=competitiveness%20and%20cohesion.,Ecology,it%20with%20%E2%82%AC30%20billion>
- 6 French Government. 2022. 'Construire la France de demain.' As of 26 July 2022: <https://www.gouvernement.fr/les-priorites/france-relance>
- 7 French Government. 2022. 'Covid-19 Toutes les informations essentielles sur la situation sanitaire.' As of 29 July 2022: <https://www.gouvernement.fr/en/european-aspects-of-france-s-recovery-plan>
- 8 European Commission. 2022. 'Recovery plan for Europe.' As of 26 July 2022: https://ec.europa.eu/info/strategy/recovery-plan-europe_en
- 9 French Government. 2022. 'Construire la France de demain.' As of 26 July 2022: <https://www.gouvernement.fr/les-priorites/france-relance>
- 10 Ministre de l'Économie, des Finances et de la Souveraineté industrielle et numérique. 2022. 'Qu'est-ce que l'économie verte ?' As of 26 July 2022: <https://www.economie.gouv.fr/cedef/economie-verte>
- 11 Camors, C. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' *Note rapide Économie*, No. 926. As of 26 July 2022: <https://www.institutparisregion.fr/nos-travaux/publications/les-pressions-vertes-et-verdissantes-des-competences-essentielles-a-la-transition-ecologique/>
- 12 Cadéron, N. et al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' Insee. As of 26 July 2022: <https://www.insee.fr/fr/statistiques/6005320>
- 13 Camors, C. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' *Note rapide Économie*, No. 926. As of 26 July 2022: <https://www.institutparisregion.fr/nos-travaux/publications/les-pressions-vertes-et-verdissantes-des-competences-essentielles-a-la-transition-ecologique/>
- 14 Camors, C. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' *Note rapide Économie*, No. 926. As of 26 July 2022: <https://www.institutparisregion.fr/nos-travaux/publications/les-pressions-vertes-et-verdissantes-des-competences-essentielles-a-la-transition-ecologique/>
- 15 Camors, C. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' *Note rapide Économie*, No. 926. As of 26 July 2022: <https://www.institutparisregion.fr/nos-travaux/publications/les-pressions-vertes-et-verdissantes-des-competences-essentielles-a-la-transition-ecologique/>
- 16 Camors, C. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' *Note rapide Économie*, No. 926. As of 26 July 2022: <https://www.institutparisregion.fr/nos-travaux/publications/les-pressions-vertes-et-verdissantes-des-competences-essentielles-a-la-transition-ecologique/>

- 17 Skills-OVATE database by Cedefop collates OJAs from multiple sources, including private job portals, public employment service portals, recruitment agencies, online newspapers and corporate websites. In December 2021, there were 172,470 OJAs in the Skills-OVATE database for Île-de-France. The database does not allow filtering out green job vacancies only. OJAs do not reflect the market demand for jobs across all occupations and sectors equally well: some sectors or professions are overrepresented if they are more likely to advertise online, while others are underrepresented.
- 18 Cedefop. 2022. Skills-OVATE data. Occupations such as professionals, managers or researchers were excluded as these likely required a university degree.
- 19 ADEME Magazine. 2022. 'Transition écologique et emploi : un cercle vertueux ?' As of 26 July 2022: <https://infos.ademe.fr/magazine-octobre-2021/dossier/transition-ecologique-et-emploi-un-cercle-vertueux/>
- 20 Ministère de la transition énergétique et solidaire. 2020. 'Stratégie nationale bas-carbone - rapport d'accompagnement.' As of 26 July 2022: <https://www.ecologie.gouv.fr/sites/default/files/20200318%20Rapport%20d%27accompagnement%20SNBC2.pdf>
- 21 Camors, C. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' *Note rapide Économie*, No. 926. As of 26 July 2022: <https://www.institutparisregion.fr/nos-travaux/publications/les-professions-vertes-et-verdissantes-des-competences-essentielles-a-la-transition-ecologique/>
- 22 Cadéron, N. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' Insee. As of 26 July 2022: <https://www.insee.fr/fr/statistiques/6005320>
- 23 Cadéron, N. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' Insee. As of 26 July 2022: <https://www.insee.fr/fr/statistiques/6005320>
- 24 Camors, C. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' *Note rapide Économie*, No. 926. As of 26 July 2022: <https://www.institutparisregion.fr/nos-travaux/publications/les-professions-vertes-et-verdissantes-des-competences-essentielles-a-la-transition-ecologique/>
- 25 Camors, C. et. al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' *Note rapide Économie*, No. 926. As of 26 July 2022: <https://www.institutparisregion.fr/nos-travaux/publications/les-professions-vertes-et-verdissantes-des-competences-essentielles-a-la-transition-ecologique/>
- 26 Cedefop. 2022. Skills-OVATE data.
- 27 Generic programmes and qualifications are those providing fundamental and personal skills education that cover a broad range of subjects and do not emphasise or specialise in a particular broad or narrow field. See: <https://ec.europa.eu/esco/portal/skill>
- 28 Cedefop. 2022. Skills-OVATE data. Cut-off point was the median of OJAs per skill (33,459).
- 29 Ministère de la Transition écologique et de la Cohésion des territoires & Ministère de la Transition énergétique. 2019. 'L'accompagnement des transitions professionnelles.' 7 February. As of 26 July 2022: <https://www.ecologie.gouv.fr/laccompagnement-des-transitions-professionnelles>
- 30 Martin, L., Ministère de l'Environnement & CGDD Service de l'économie, de l'évaluation et de l'intégration du développement durable. 2016. 'Transition écologique et énergétique : accompagner les transitions professionnelles.' *Point sur - Économie et évaluation - Développement durable*, N° 227. As of 26 July 2022: <https://side.developpement-durable.gouv.fr/Default/doc/SYRACUSE/351355/transition-ecologique-et-energetique-accompagner-les-transitions-professionnelles>
- 31 Ministère de la Transition écologique et de la Cohésion des territoires & Ministère de la Transition énergétique. 2019. 'La formation et la transition écologique.' 7 February. As of 26 July 2022: <https://www.ecologie.gouv.fr/formation-et-transition-ecologique>
- 32 Ministère de la Transition écologique et de la Cohésion des territoires & Ministère de la Transition énergétique (homepage). 2022. As of 26 July 2022: <https://www.ecologie.gouv.fr/>
- 33 Ministère du Travail, du Plein emploi et de l'Insertion (homepage). 2022. As of 26 July 2022: <https://travail-emploi.gouv.fr/>

- 34 Ministère de la Transition écologique et de la Cohésion des territoires & Ministère de la Transition énergétique. 2019. 'L'accompagnement des transitions professionnelles.' 7 February. As of 26 July 2022: <https://www.ecologie.gouv.fr/laccompagnement-des-transitions-professionnelles>
- 35 Ministère de la Transition écologique et de la Cohésion des territoires & Ministère de la Transition énergétique. 2019. 'L'accompagnement des transitions professionnelles.' 7 February. As of 31/01/2022: <https://www.ecologie.gouv.fr/laccompagnement-des-transitions-professionnelles>
- 36 Petrella, F. & Richez-Battesti, N. 2020. 'Social enterprises and their ecosystems in Europe. Updated country report: France.' European Commission. Luxembourg: Publications Office of the European Union. As of 26 July 2022: <https://europa.eu/!Qq64ny>
- 37 Ministère du Travail, du Plein emploi et de l'Insertion. 2022. 'Entreprises d'insertion (EI)' As of 26 July 2022: <https://travail-emploi.gouv.fr/emploi-et-insertion/insertion-activite-economique/article/entreprises-d-insertion-ei>
- 38 La Petite Reine (homepage). 2022. As of 26 July 2022: <https://lapetitereine.com/>
- 39 La Petite Reine. 2022. 'Nos valeurs sociales.' As of 26 July 2022: <https://lapetitereine.com/nos-valeurs/nos-valeurs-sociales/>
- 40 Tricycle (homepage). 2022. As of 26 July 2022: <https://tricycle-environnement.fr/>
- 41 La fédération des entreprises d'insertion (homepage). 2022. As of 26 July 2022: <http://www.lesentreprisesdinsertion.org/>
- 42 Tricycle. 2022. 'Notre engagement ESS.' As of 26 July 2022: <https://tricycle-environnement.fr/engagement-ess>
- 43 Cadéron, N. et al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' Insee. As of 26 July 2022: <https://www.insee.fr/fr/statistiques/6005320>
- 44 Cadéron, N. et al. 2021. 'Les professions vertes et verdissantes, des compétences essentielles à la transition écologique.' Insee. As of 26 July 2022: <https://www.insee.fr/fr/statistiques/6005320>
- 45 Réseau des Carif Oref. 2021. 'CAP propreté de l'environnement urbain - collecte et recyclage.' As of 26 July 2022: https://reseau.intercariforef.org/formations/cap-proprete-de-lenvironnement-urbain-collecte-et-recyclage/cma-93/formation-14_AF_0000110231_SE_0000569064.html
- 46 Réseau des Carif Oref. 2021. 'CAP agent d'assainissement et de collecte des déchets liquides spéciaux.' As of 26 July 2022: https://reseau.intercariforef.org/formations/cap-agent-dassainissement-et-de-collecte-des-dechets-liquides-speciaux/association-vecteur-cfa-d-cancourt-campus-veolia-centre-de-formation-dapprentissage-institut-de-lenvironnement-urbain/formation-14_AF_0000111525_SE_0000576466.html
- 47 Réseau des Carif Oref. 2021. 'CAP agricole jardinier paysagiste.' As of 26 July 2022: https://reseau.intercariforef.org/formations/cap-agricole-jardinier-paysagiste/centre-de-formation-saint-philippe/formation-14_AF_0000095578_SE_0000532985.html
- 48 Fédération Ecoconstruire (homepage). 2022. As of 26 July 2022: <https://www.federation-ecoconstruire.org/>
- 49 Fédération Ecoconstruire. 2022. 'Nos objectifs.' As of 26 July 2022: <https://www.federation-ecoconstruire.org/qui-sommes-nous/nos-objectifs/>
- 50 ETRE (homepage). 2022. As of 26 July 2022: <https://www.ecole-transition.eu>
- 51 Agence régionale énergie-climat (homepage). 2022. As of 26 July 2022: <https://www.arec-idf.fr/>
- 52 Observatoire Régional des Déchets (homepage). 2022. As of 26 July 2022: <https://www.ordeec.org/>
- 53 Bati're. 2022. 'Bati're, le BTP Social et Solidaire.' As of 26 July 2022: <http://www.laclairiere.org/economie-sociale-et-solidaire/bati-re-entreprise-d-insertion-dans-le-second-oeuvre-batiment/>
- 54 Energies9 (homepage). 2022. As of 14/02/2022: <https://www.energies9.com/>

- 55 AECOM (homepage). As of 26 July 2022: <https://aecom.com/fr/>
- 56 Ares (homepage). 2022. As of 26 July 2022: <https://www.groupeares.fr/>
- 57 CSTB (homepage). 2022. As of 26 July 2022: <http://www.cstb.fr/fr/>
- 58 Moulinot. 2022. 'Les origines.' As of 26 July 2022: <https://www.moulinot.fr/les-origines/>
- 59 Recnorec (homepage). 2022. As of 26 July 2022: <https://recnorec.fr/>
- 60 Saur (homepage). 2022. As of 26 July 2022: <https://www.saur.com/>
- 61 ETRE (homepage). 2022. As of 26 July 2022: <https://www.ecole-transition.eu>
- 62 Fédération Ecoconstruire (homepage). 2022. As of 26 July 2022: <https://www.federation-ecoconstruire.org/>
- 63 Collectif Réfugiés (homepage). 2022. As of 26 July 2022: <http://www.collectif-refugies.com/>
- 64 Paroles Voyageuses (homepage). 2022. As of 26 July 2022: <https://paroles-voyageuses.com/>
- 65 Alliance Villes Emploi (homepage). 2022. As of 26 July 2022: <https://www.ville-emploi.asso.fr/>
- 66 Confédération des Métiers de l'Environnement (homepage). 2022. As of 26 July 2022: <https://www.cme-france.fr/>
- 67 Emploi Environnement (homepage). 2022. As of 26 July 2022: <https://www.emploi-environnement.com/>
- 68 INEC (homepage). 2022. As of 26 July 2022: <https://institut-economie-circulaire.fr/>
- 69 RéaVie. 2022. 'Réemploi des matériaux et emploi des personnes.' As of 26 July 2022: <https://asso-reavie.fr/apropos/>
- 70 Moulinot. 2022. 'Les origines.' As of 26 July 2022: <https://www.moulinot.fr/les-origines/>
- 71 Tricycles. 2022. 'Qui sommes-nous ?' As of 26 July 2022: <https://tricycle-environnement.fr/qui-sommes-nous>
- 72 Ecodair (homepage). 2022. As of 26 July 2022: <https://www.ecodair.org/>
- 73 Hofman, Joanna, Michaela Bruckmayer, Katrin Feyerabend, Giulia Lanfredi & Lydia Lymperis. "Green' jobs and skills development for disadvantaged groups.' Santa Monica, Calif: RAND Corporation. As of 27 May 2022: <https://www.rand.org/randeuropa/research/projects/green-jobs-and-skills-development-for-disadvantaged-groups-.html>

Authors: Simon Larmour, Michaela Bruckmayer, Joanna Hofman

This study focused on people with low qualifications, meaning those with at most a lower secondary qualification who experience a high risk of poverty and social exclusion, and explored green job opportunities that exist for them, including those that would require reskilling (training to obtain different skills) or upskilling (training to obtain more advanced skills). In this study (unless stated otherwise), green jobs are understood as jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources, and green skills denote skills needed to adapt products, services and processes to climate change and the related environmental requirements and regulations. Evidence presented here includes national-level data (where regional and local information was not available) and focuses on data specific to green jobs or people with low qualifications. Full details can be found in the main report.

For more information on this publication, visit www.rand.org/t/RRA1603-1.

About RAND Europe

RAND Europe is a not-for-profit research organisation that helps improve policy and decision making through research and analysis. To learn more about RAND Europe, visit www.randeurope.org.

Research Integrity

Our mission to help improve policy and decision making through research and analysis is enabled through our core values of quality and objectivity and our unwavering commitment to the highest level of integrity and ethical behaviour. To help ensure our research and analysis are rigorous, objective, and nonpartisan, we subject our research publications to a robust and exacting quality-assurance process; avoid both the appearance and reality of financial and other conflicts of interest through staff training, project screening, and a policy of mandatory disclosure; and pursue transparency in our research engagements through our commitment to the open publication of our research findings and recommendations, disclosure of the source of funding of published research, and policies to ensure intellectual independence. For more information, visit www.rand.org/about/principles.

RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

Published by the RAND Corporation, Santa Monica, Calif., and Cambridge, UK

© 2022 RAND Corporation

RAND® is a registered trademark.

Limited Print and Electronic Distribution Rights

This publication and trademark(s) contained herein are protected by law. This representation of RAND intellectual property is provided for noncommercial use only. Unauthorised posting of this publication online is prohibited; linking directly to its webpage on rand.org is encouraged. Permission is required from RAND to reproduce, or reuse in another form, any of its research products for commercial purposes. For information on reprint and reuse permissions, please visit www.rand.org/pubs/permissions.

Image credits

Cover: Adobe Stock/NicoElNino; p. 7 top to bottom: Adobe Stock/ JackF, Adobe Stock/Gary Perkin; p. 8 top to bottom: Adobe Stock/Seventyfour, Adobe Stock/Mihail