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OECD CENTRE FOR SKILLS
EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS COMMITTEE EDUCATION POLICY COMMITTEE

Summary Record for the 30th Meeting of the OECD Skills Advisory Group

Skills for Greener Economies

Summary Record for the 30th Meeting of the OECD Skills Advisory Group, which took place in hybrid mode on 20 May 2022.

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30th Meeting of the OECD Skills Advisory Group
20 May 2022
Hybrid Meeting, 09:30-16:00 Paris Time
Summary Record

09:30-10:00

Item 1. Introduction and Update

1. *Stefano Scarpetta, Director of the Employment, Labour and Social Affairs Directorate, OECD,* welcomed all the participants to the 30th Skills Advisory Group (SAG) Meeting focusing on skills for greener economies. He introduced the agenda in the context of the current energy crisis following the Russian aggression on Ukraine and stressed the importance of cross-sector collaboration and partnerships to find comprehensive policy solutions when facing challenges as complex as global warming. Moreover, he invited country representatives to share their countries' challenges and experiences and provide feedback on the OECD's work.

2. *El Iza Mohamedou, Head of the OECD Centre for Skills*, provided an extensive overview of the OECD's work on skills, which includes work produced by the OECD Centre for Skills, the Directorate for Employment, Labour and Social Affairs, the Directorate for Science, Technology and Innovation, the Centre for Entrepreneurship, SMEs, Regions and Cities, and the Directorate for Education and Skills.

- Details of these work streams can be found in the PowerPoint presentation available on the community site: https://community.oecd.org/community/sag

10:00-11:00

Item 2. Spotlight Presentation

Item 2.a. Scenarios on the Low Carbon Transition and Implications for Labour Markets and Skills

Elisa Lanzi, Senior Economist at the Environment Directorate, OECD

3. Elisa Lanzi presented the OECD Environment Directorate's (ENV) work on low carbon transition scenarios and how these can affect the labour market and, therefore, the demand for skills. First, she explained how future economic developments would impact greenhouse gas (GHG) emissions. Then, she presented the "Horizontal Project on Integrating Climate and Economic Resilience" before discussing how the transition towards a low carbon economy might affect the labour market and skills demand. By creating projections using the ENV-Linkages model (a Computable General Equilibrium model), ENV is able to connect economic growth with emissions, which allows the study of the socio-economic consequences of environmental policies as well as economic feedback following environmental damage.

4. *Changes in future emission levels*: Projections show that the economic and population growth will drive the emission increase. It is foreseen that the future energy mix will become more efficient by relying more on renewable energy; however, it will not be enough to reduce emissions. When looking at the sectoral projections over the following decades, emission-intensive sectors will still be growing, though at a slower pace than less emission-intensive sectors. The current emission pathway implies a high increase in global temperatures (+4 degrees by the end of the century). The consequences of reaching this point can be extremely costly.

5. *Linking climate policies and fiscal sustainability*: The cross-directorate "Horizontal Project on Integrating Climate and Economic Resilience" creates projections for Net-Zero emission pathways using the ENV-Linkages model. +ENV combines the International Energy Agency's energy projections and investment requirements with other policies to estimate the costs and revenues when transitioning towards the Net-Zero scenario. Different policies will have different consequences for the government revenues.

6. *How the labour market and skills demand will be affected by the transition towards Net-Zero*: Data shows that sectors that are more energy-intensive and produce more GHG emissions are also sectors relying less on labour, meaning that the number of jobs lost would be less severe when trying to reduce these sectors. However, as we are striving for Net-Zero, some sectors that are less emission-intensive would also need to be reduced. Though the results are only preliminary, it looks like there will be overall more job losses than job creations. Therefore, it is crucial to understand how the Net-Zero pathway will affect the labour market in order to better support green skills development and retraining across sectors.

7. *Work with the SKC*: In its collaboration with the OECD Centre for Skills (SKC), ENV will focus on the EU and its "Fit for 55" target (link). Using the ENV-Linkages model, ENV will create employment projections per sector and occupation that SKC will then translate into changes in skills demand.

8. *Discussion*: The presented model is an equilibrium model that works best for long-term assessments on a macro-regional level. From the policy point of view, it would be important to shed more light on short-term scenarios and the jobs and skills that are going to be created. The model could be adjusted to take into account various factors, such as labour mobility. Working together with SKC offers a partnership where empirical data would allow to test the model and aims to spur policymaking into taking action.

- Details of ENV's work on the low carbon transition and its implications on the labour market and skills can be found in the PowerPoint presentation on the community site: https://community.oecd.org/community/sag

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11:30-12:45

Item 3. Interactive Thematic Section – Part 1: What Skills Are Required to Foster the Green Transition?

9. The thematic section featured four presentations from the OECD Centre for Skills, the OECD Directorate for Employment, Labour and Social Affairs, the United Kingdom, and the European Commission. Following the presentations, the participants were invited to share comments and ask questions.

Item 3.a. Skills for a Green Transition in the Skills Outlook 2023

Francesca Borgonovi, Senior Policy Analyst at the OECD Centre for Skills

10. Building on the Skills Outlook 2023 that will focus on recovery and resilience and cover three interrelated topics, namely, skills in relation to the environment, health, and knowledge societies, Francesca Borgonovi presented the role of skills in light of the green transition. A just and inclusive green transition in the short- to medium-term calls for large investments in upskilling and reskilling as well as mitigation strategies to limit environmental changes on skills development. In the long-term, however, the policies must focus on equipping individuals with sustainability competencies through schooling curricula geared to changing consumption patterns and developing new technologies and skills to protect the environment.

11. *Publications*: Recently, the OECD Centre for Skills (SKC) has published an extensive literature review (https://doi.org/10.1787/1815199X) on how environmental context shapes skills development and effective skills use. Within the upcoming months, further publications are planned, focusing on the role of educational systems in teaching young people environmental sustainability competencies (September 2022), the role of environmental shocks and economic conditions in shaping environmental policy support (fall 2022), and skills demand in relation to the green transition (December 2022).

12. *Sustainability competence allrounders*: Using PISA data from 2018 and 2015, SKC and the European Commission's (EC) Joint Research Centre (JRC) try to quantify the sustainability competencies defined in the European Sustainability Competence Framework (GreenComp) established by the EC. Moreover, as the question arises whether and to what extent one should be proficient in all of these competencies, they integrate a framework combining the different competence areas to identify so-called sustainability competence allrounders. The "toolbox" includes caring about the environment, having the necessary skills to understand the issue's complexity, having sufficient self-efficacy to envision sustainable futures, and then actually acting upon it. In the next step, they extend this toolbox to study how it is associated with collaborative problem-solving, digital literacy, as well as financial literacy.

13. *Skills for green jobs*: Before analysing the skills demanded for green jobs, it is crucial to define what green jobs are. While there exist different definitions, SKC will use the policy-driven definition, according to which green jobs are understood as those jobs that will grow in demand when implementing net-zero policies. It is important to acknowledge that there are different job "greenness" levels and that many jobs that will help us transition towards a low carbon economy will not be "fully green." In collaboration with the OECD Environment Directorate (ENV), SKC aims to estimate the labour market impact of green policies in the EU, focusing on its "Fit for 55" targets. In addition to creating employment number estimates by sector, sectoral forecasts on energy and automotive sectors are conducted to analyse how skills content and, therefore, jobs will change. Moreover, Burning Glass (BGT) data is used to identify different skill profiles.

- Details of SKC's work on skills for a green transition can be found in the PowerPoint presentation available on the community site https://community.oecd.org/community/sag

Item 3.b. Energy Crisis, the Green Transition and Skill Demands through the Lenses of Big Data

Fabio Manca, Big Data Coordinator at the Directorate for Employment, Labour and Social Affairs, OECD

14. Fabio Manca showed how to look at the green transition and skills demand through the lens of big data. In addition to 'traditional' labour market statistics, the Employment, Labour and Social Affairs Directorate (ELS) uses online job postings to compare different jobs (in particular, green vs. brown jobs) and analyse how the respective vacancies evolve over time. The data covers 100 000 000 online vacancies, 14 000 skills, and 700 occupations in Australia, Canada, the EU27, New Zealand, Singapore, the United Kingdom, and the United States from 2012 to close to real-time. The job postings allow us to extract additional information, such as wages, the requested educational level, study fields, or certifications. Online job vacancy data helps identify skills profiles for energy occupations and, therefore, understand where reskilling will be necessary and what reskilling should look like. Moreover, online job vacancy data data allows determining green occupations by ranking them according to skills and technologies that are relevant for the green transition. By mapping this data, one can observe a positive correlation between skills relevant to the green transition and average wages. To summarize, this data enables seeing how the labour market and skill demands evolve over time, which helps identify retraining needs and potential career moves of those who are at risk of losing or have already lost their job. It is important to inform on changing skill demands to allow people to adapt in time.

- Details of the ELS' work on the green transition and skill demands through the lens of big data can be found in the PowerPoint on the community site: https://community.oecd.org/community/sag

Item 3.c. Country Presentation: The United Kingdom and the Skills Required to Foster the Green Transition

Adrian Ham, Data Science Team Leader at the UK Department for Business, Energy and Industrial Strategy, United Kingdom

15. Adrian Ham discussed the experimental analysis of the green transition by the United Kingdom's (UK) Department for Business, Energy and Industrial Strategy (BEIS). BEIS focuses on monitoring jobs and skills in real-time by providing granular insights, including sectors, employers, skills, job roles, and geography. The overarching policy is the UK's 10-point plan for a green industrial revolution to create more jobs by 2030. Using machine learning and expert knowledge, an attempt is made to identify net-zero jobs, net-zero sectors, as well as the associated skills of those jobs within the ten sectors. For each sector, labels are created based on job texts of online UK jobs, which are subsequently used in a machine learning model in order to receive the net-zero jobs per sector with an overall precision of 90%. These models are of increasing value as they aim to understand the future skills demand and how this transition might influence jobs and individuals and, lastly, match skills demanded by employers to the skills offered by the educational system.

Item 3.d. Green Skills and Knowledge Concepts in ESCO: Labelling the ESCO Classifications

Chiara Stramaccioni, Data Analyst at European Skills, Competences, Qualifications and Occupations (ESCO), European Commission

16. Chiara Stramaccioni presented ESCO's approach to investigating green jobs and skills. ESCO works as a dictionary describing, identifying, and classifying professional occupations, skills, and qualifications in order to encourage intra-European mobility, align people's skills with the needs of the industry, as well as provide skills-based labour market services. The definition of "green skills and knowledge concepts" used by ESCO is "the knowledge abilities, values, and attitudes needed to live in, develop and support a society which reduces the impact of human activity on the environment" (Cedefop 2012).

17. ESCO labels skills and knowledge concepts as "green" (positive effect on the environment), "brown" (negative effect), and "white" (no effect). The labelling follows a methodology that combines human labelling and validation and the use of Machine Learning (ML) algorithms. Upon request, the methodology and training dataset can be provided. A total of 571 ESCO skills and knowledge concepts are labelled as green. This includes: 381 skills, 185 knowledge concepts, and 5 transversal skills. The ESCO classification may be used by partners, which can include but are not limited to public employment services, research bodies, private companies, Human Resources, or Vocational Education and Training providers.

- Details of ESCO's work on the green transition can be found in the PowerPoint presentation on the community site: https://community.oecd.org/community/sag

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14:15-15:30

Item 4. Interactive Thematic Section – Part 2: How to Develop the Skills Needed for the Green Transition?

18. The thematic section featured four presentations from the OECD Centre for Entrepreneurship, SMEs, Regions and Cities, the OECD Directorate for Employment, Labour and

Social Affairs, the OECD Centre for Skills, and the OECD Directorate for Education and Skills. Following the presentations, the participants were invited to share comments and ask questions.

Item 4.a. CFE Work on the Green Transition and Local Labour Markets

Lukas Kleine-Rueschkamp, Economist at the Centre for Entrepreneurship, SMEs, Regions and Cities, OECD

19. Lukas Kleine-Rueschkamp presented the Centre for Entrepreneurship, SMEs, Regions and Cities' (CFE) work on the green transition in relation to the local labour market. After diving into the green transition's implications for local jobs and skills, he explained how CFE approaches this topic and shared related policy recommendations.

20. *Implications for local jobs and skills*: Although the green transition is a global challenge, it has local implications. It not only requires a transformation across every industry in the economy but also entails a "greening" of the labour market and is extremely localised both in terms of risks and opportunities. Questions revolving around the challenges and opportunities for the local labour market include: "How to define green jobs – present and future – and what is the labour market demand for these skills?", "What sectors will be most affected?" and "To what extent can the circular economy help support the local economy?"

21. *CFE's approach:* CFE uses a bottom-up definition of green jobs, whereby green jobs are defined based on occupations' skills and tasks. The result is a continuous measure of greenness (0 to 1), which brings significant advantages to local labour markets, such as yielding regional estimates of green jobs, avoiding measurement errors, and accounting for partial greenness in jobs. By using labour force surveys and online vacancies, CFE is able to show the large regional disparities in green employment. In several countries, such as Finland, Hungary, or Spain, the disparity is significant. However, more work has to be done, such as elaborating on weighing the greenness of tasks within a job.

22. *Policy recommendations:* On the policy side, CFE aims to provide policy recommendations for local labour markets through national policies and strategies, helping classify "green jobs" or forecasting, rethinking skills and training through local initiatives, and supporting sectoral and cluster approaches in order to leave no one behind and leverage a just transition.

- Details of the CFE's work on the green transition can be found in the PowerPoint presentation available on the community site: https://community.oecd.org/community/sag

Item 4.b. Skills Assessment and Anticipation for the Green Transition

Glenda Quintini, Senior Policy Analyst at the Skills Analysis and Employability Division at the Directorate for Employment, Labour and Social Affairs, OECD

23. Glenda Quintini from the Employment, Labour and Social Affairs Directorate (ELS) discussed how different countries –Australia, France, Norway, and Sweden – approach the green transition. The objective of this project is to assess and anticipate changing skill needs specific to green transition, drawing on current methods and data. Afterwards, research is done to investigate how the information produced is used for policymaking, i.e. to better match training provided by public employment services to skills in demand or to better guide adults in their choice of courses and careers. Lastly, the project revolves around the "peer-learning workshops," where, over the course of several months, four workshops are organised to not only assess the different methods and present the use of big data from a variety of perspectives but also to show how estimates of skills implications of the green transition can be used for policymaking in different fields. The goal of these workshops is to stimulate inter-governmental learning. The final report will compile different guidelines and methods and include the discussion notes from the workshops.

- Details of the ELS' work on skills assessment and anticipation for the green transition can be found in the PowerPoint on the community site: https://community.oecd.org/community/sag

Item 4.c. VET and the Green Transition

Marieke Vandeweyer, Senior Policy Analyst at the OECD Centre for Skills

24. Marieke Vandeweyer from the OECD Centre for Skills discussed the green transition in relation to vocational education and training (VET). She explained that many typical VET jobs do not only lie at the heart of the green transition but that VET is generally more responsive to changing skill needs. Due to its strong connection with social partners, VET sits at the intersection of the educational system and the labour market. Furthermore, it covers many fields and sectors, making it a relevant topic in relation to the green transition.

25. Apprenticeships for greener economies and societies: Recently, the OECD VET team and Cedefop published a compilation of research papers on apprenticeships for greener economies and societies (May 2022). It concluded that while, in the short-term, there is a need for a modular approach to apprenticeship adaptation, in the long-term, the design and adaptation of apprenticeships should not be limited to certain occupations, sectors, or geographic areas. Moreover, a multi-stakeholder approach helps ensure that apprenticeships are designed and adapted in a systemic way, which allows for "cross-fertilization" between learning venues. Lastly, a successful green transition can only work if companies support the transition and the accompanied changes in their skill strategy.

26. New project proposal: However, many questions remain regarding VET and the green transition. For this reason, a new project proposal has been set up. Here the OECD focuses on analysis of data, such as online vacancies and labour market information, and of VET curricula, to explore changes in the skill requirements in VET occupations and changes in the content of VET programmes related to the green transition. Complementing this data analysis, case studies will be used to investigate policies and practices in VET, which will allow to construct policy briefs for countries, providing tailored advice and recommendations. Finally, all of the information will be brought together in a synthesis report while bringing it into practice through peer-learning events.

- Details of the VET team's work on the green transition can be found in the PowerPoint presentation on community site: https://community.oecd.org/community/sag

Item 4.d. The Role of Education

Anthony Mann, Senior Policy Analyst at the Directorate for Education and Skills, OECD

27. The last presentation discussed a PISA report regarding sustainability and education, showing how in 80% of the cases, sustainability, climate change, poverty, or migration made it into school curricula. However, when taking the perspective of the students, interesting trends arise. For example, according to the latest PISA survey, over three-quarters of 15-year-olds note the importance and urgency of climate change. Yet, this number is reduced significantly when asked whether they can positively impact the environment. Education for sustainable development will need to achieve a balance between sustainability and resilience. Lastly, it is vital to create a virtuous cycle where education leads to firm political commitments, subsequently having a positive impact on the local community through volunteering, and, later on, leading to bettering business practices, consumption and lifestyle patterns, and positively influencing the behaviour of others.

- Details on the education system's role in developing the skills needed for a green transition can be found in the PowerPoint presentation available on the community site: https://community.oecd.org/community/sa

Item 4.e. Discussion on items 3 and 4

28. Overall, comments from the audience were positive. New methodologies are being created, and good examples of measuring "green jobs" or adapting skills are multiplying. Country representatives noted that we need to better prepare teachers to teach skills and develop knowledge that foster green transition. Finding the correct definitions, for instance, for the term "green job" and the associated methodologies to measure "greenness" accurately, represent a challenge. Furthermore, it is important to keep track of what skills will be essential in the future. At the moment, it seems that there is still a prevalence of the need for technical and digital skills as well as scientific literacy. If the demands for such skills change, it is necessary to accurately capture such changes to inform policy makers.

29. On a last note, Latvia indicated a paper on the green economy and the green transition will soon be made available. Moreover, Israel requested the possibility of additional meetings to share their own "climate change adaptation programs."

15:30-16:00

Item 5. Concluding Remarks

30. El Iza Mohamedou pointed out the importance of coordinating and building synergies regarding the work being done in this field. The presentation of the methodologies during the meeting aims to provide a clearer insight into topics such as green jobs and the green transition. Currently, the OECD is working on an overall framework that includes different technical reports and their respective methodologies and will provide further explanation on the different potential uses of the different methodologies. The next SAG meeting, which will take place virtually in the fall of 2022, will not only focus on an update on what is being done within the OECD but will also include a progress update on the topics presented in this meeting. While the OECD has already thought of some topics for the next SAG meeting, including skills in relation to technology, health, or population ageing, she invited the SAG members to share their topic ideas. Moreover, a SAG community site will be set up, on which one can find information on past and future SAG meetings and facilitate information exchange.