PACT FOR SKILLS FOR THE RENEWABLE ENERGY SECTOR

Challenge

The European energy system has been severely shaken following Russia's invasion of Ukraine. As a response, the Commission adopted a REPowerEU Communication in March and a REPowerEU Plan on 18 May 2022 to phase out the EU dependence on Russian fossil fuels. Massive and accelerated deployment of renewables is at the heart of this initiative. The Plan proposes actions on renewables on both the supply and demand side. It puts forward EU's increased 2030 renewable energy target of 45% and a permitting initiative to accelerate the uptake of renewables well before 2030. It also foresees action on the supply side, involving the EU renewable industry, including as regards the skilled workforce necessary for such acceleration. The actions put forward under the REPowerEU Plan call for frontloading and increasing renewables deployment. In particular, the EU Solar Energy Strategy[1] and the Commission initiatives on permitting[2] will underpin this acceleration via a set of measures to support Member States and stakeholders in a coordinated way.

To strengthen the EU's competitiveness in its transition to a net-zero economy, the Commission adopted on 1 February 2023 the Green Deal Industrial Plan[3] focusing on the EU's manufacturing capacity. The third pillar of the Green Deal Industrial Plan focuses on skills via a 'Pact for Skills' seeking to create large-scale European public-private multi-stakeholder partnerships, where major players in industrial ecosystems and value or supply chains (including associations and relevant public authorities) commit to cooperate and invest to provide up-/re-skilling opportunities for employees in the whole industrial ecosystem, including SMEs.

1 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions EU solar energy strategy, com/2022/221 final

2 Commission Recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements, C/2022/3219 final; Commission Staff Working Document Guidance to Member States on good practices to speed up permit-granting procedures for renewable energy projects and on facilitating Power Purchase Agreements Accompanying the document Commission Recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements, SWD/2022/0149 final and Proposal for a Directive of the European Parliament and of the Council amending Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources, Directive
2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency, COM/2022/222 final

3 Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, A Green Deal Industrial Plan for the Net-Zero Age, COM(2023) 62 final.

On 16 February 2023, in the resolution on 'an EU strategy to boost industrial competitiveness, trade and quality jobs', the European Parliament stressed the need of enhanced quality jobs and skills.[4] 2023 being the European Year of Skills, this Pact comes at a time when skills, generally, are under the European spotlight.

Vision

Accounting for all renewable energy sectors, achieving our REPowerEU targets will require the creation of over **3.5 million jobs by 2030**. This challenge is of gigantic scale and requires urgent action from all stakeholders and policymakers across the continent.

A sufficient number of staff with the necessary skills - particularly in technical and STEM (Science, Technology, Engineering and Mathematics) fields - will be critical to ensure a fast, steady and equitable deployment of renewable energy solutions for cost-effective and lasting benefits and to make sure that this is done in a timely and professional way along renewable energy value chains.

Shortage of skills and lack of an adequate workforce in the various segments of renewable energy technologies' value chains could disrupt the necessary pace for development of renewable energy and thus put at risk the achievement of the REPowerEU goals and the proposed EU renewable energy target for 2030. The lack of workforce with adequate skills risks being a significant barrier to scale up renewables and is recognised by industry as a pressing concern. The REPowerEU Plan calls for additional efforts to overcome the shortage of skilled workforce to enable the acceleration of renewables deployment and announces support to skills through ERASMUS + and the Joint Undertaking on Clean Hydrogen, with the launch of a large project to develop skills for the hydrogen economy. Specific actions on addressing shortage of skills are also proposed in the EU Solar Energy Strategy and in the "Commission Recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements". The EU is taking action to address skills related challenges posed by the twin green and digital transition through its overarching framework - the European Skills Agenda. Under the Pact for Skills, a flagship of this Agenda, there is already an established, similar large-scale partnership addressing the skills challenges of the offshore renewable industry. The European Year of Skills 2023 is a unique opportunity to develop the skills needed to thrive in a rapidly changing economy and to step up efforts.

[4] 2023/2513(RSP), paragraphs 42 to 48 Texts adopted - An EU strategy to boost industrial competitiveness, trade and quality jobs - Thursday, 16 February 2023 (europa.eu)

Skills and workers needed for the energy transition

STEM skills needed

Overall, around 1.3 million persons were directly or indirectly employed in the European Union renewable energy sector in 2020. From 2019 to 2020 there was a gross increase of 65 000 jobs (+5.2%), notwithstanding the Covid-19 pandemic.

This number is set to increase following the accelerated deployment of clean energy solutions. The coming energy system transformation will be achieved only with a sufficiently numerous, well-trained workforce.

There is a general shortage of professionals with a STEM background[5] - a potential critical bottleneck for the industry. This is a structural issue that could affect all EU Member States and all sectors of the clean energy industry.

Women underrepresented

Women only accounted for 32% of the workforce in the renewables sector in 2019. Attracting more women to clean energy related jobs and retaining them in technical and in STEM fields would fill vacancies while including women. Furthermore, striving for equal employment opportunities for all social categories across EU countries and across firms could further help boost workforce availability to contribute to the energy transition, whilst also improving equity prospects.

Up and re-skilling

While attracting new professionals into the renewable energy ecosystem is key to meet the EU climate and energy targets, up-skilling and re-skilling will also contribute to this vision. The Commission estimates that to realise the employment potential of EU's low-carbon transition, large-scale investments of around EUR 12 billion between 2015 and 2030 will be needed on retraining (reskilling and upskilling).

This Partnership which brings together leaders from the entire spectrum of the renewable energy value chain (power generation, heating and cooling and production of green fuels), finds the following categories of skills necessary for the RE industry workforce:

- Administrative, legal and technical/digital skills for staff in permitting authorities to process project permits and evaluate environmental impact assessments;

5 To give some examples: it is estimated that 800.000 workers will need to be trained – reskilled or upskilled – and equipped with battery-specific expertise across the batteries value chain; 250 000 people need to acquire skilling and upskilling in the field of offshore renewable energy; the solar heating and cooling sector will require an additional 130 000 skilled workforce, for manufacturing, design, installation and maintenance of solar thermal systems supplying buildings, district heating and industrial processes; about 400 000 workers will have to be trained and upskilled in the heat pump value chain, not including those experts currently working in heat pumps and facing retirement in the next few years.

- Skills for the manufacturing of clean energy technologies, including engineering, digital, automation and scientific skills;
- Skills for the design, installation, optimal functioning and maintenance of renewable heating and cooling systems;
- Skills for the design, installation, operation and maintenance of renewable energy technologies;
- Skills linked to the installation, operation and management of district heating and cooling systems;
- Skills for the exploration, prospection, drilling, installation, control and maintenance of geothermal energy plants;
- Renewables planning and project development skills (mainly for municipalities and energy communities);
- Planning and project management skills for renewable energy developers;
- Circular economy skills;
- Occupational health and safety skills;
- Skills for the sourcing, mobilisation, pre-treatment and tracing of sustainable biomass and organic material
- Skills to integrate clean energy solutions in buildings, including building-integrated solar energy equipment and energy storage (thermal and power storage);
- Skills for the design, planning and management of flexible supply, transmission, distribution and storage infrastructure, to enable high levels of flexible renewable supply 24/7;
- Skills for energy system integration;
- Commercial skills for commercial energy buyers, to increase corporate participation in new and complex renewable electricity and renewable gas markets;
- Skills related to community engagement, outreach and organisation, as well as coaching for households and local communities on adopting sustainable behavioural change, uptake and ownership of clean energy technologies, project development and professionalisation.
- Skills in social sciences and humanities (SSH) applied to renewable energy deployment and the energy transition.

Education and training needed for the energy transition

Education and training are fundamental for both providing the basic skills to future workers and reskilling/upskilling the existing workforce, which could transition to the clean energy sector from other industries, including the fossil fuel sector. Skills must be developed at all qualification levels, for

technical workers and high-skilled professionals alike, to create new jobs or bring innovation into existing ones. Education and training must be forward-looking, to best prepare the workforce for future trends. E.g. resilience to expected disruptions from the raise of AI technologies will be crucial to create the attraction needed for the sector.

Technical education and training pathways, which are indispensable to concretely implement the energy transition, are not always sufficiently developed and generally suffer from a poor image compared to academic education. Promoting vocational education and training as well as technical degrees for the clean energy sector must become a priority for local and regional policymakers. Relevant actions must be implemented already from primary education, reinforced and adapted to meet current skills and workers shortages and avert future ones.

As skills demand evolves in line with the clean energy transition, education and training need to be tailored to these new developments and they need to be made more attractive, especially for students, job seekers and people looking for reskilling opportunities but also for local communities and social economy actors that want to start activities around renewable energy and energy savings.

In cooperation between policymakers and industry stakeholders, education and training must fit market needs and a sufficient amount of apprenticeship opportunities need to be made available. To support reskilling and upskilling, life-long-learning and adult learning schemes need to be developed and implemented, in a pragmatic way to suit recipients' expectations (on-site training at workplaces, free and easily accessible training materials, e-learning platforms). It is also important to foster cross-sectorial education and training, not only between different energy technologies but also between the energy and other sectors, such as transport, buildings and industry.

The renewable energy industry has already put in place some examples of initiatives aiming to strengthen the skill basis of European workers[6], but more needs to be done from all relevant actors, in cooperation with public authorities. Beyond the mere exchange of best practices it is crucial now to define the structural changes required for education and training schemes that will effectively fulfil the skill needs.

6 The #SolarWorks campaign from SolarPower Europe, which raises awareness on growing solar job opportunities in Europe and aims to connect potential solar workers with the right training to get them started. SolarPower Europe has also launched the first online solar jobs platform, connecting job seekers to solar companies and education programmes. The European Master in Renewable Energy (EMRE) and the European Master in Sustainable Energy Management (SESyM) coordinated by EUREC are good examples of post-graduate programmes taught across 9 European countries that offers specialisation on a renewable energy technology of choice. The courses include practical experience in industry and a streamlined programme of 3 semesters, helping engineers from the fossil industry and other related sectors to make a career switch into renewables. GeoTrainet is the organisation behind the European wide training and certification programme for shallow geothermal installers. Its aim is to ensure high quality installations for a sustainable market. EIT InnoEnergy provides Master degree programmes across top universities Europe, which include collaboration with the industry as well as entrepreneurial aspects. In the Netherlands, the Dutch government entered in February 2023 a public/private partnership with the installation sector and other business organisations for a "Green and Digital Jobs Action Plan" aiming at solving the shortage of technicians and equipping 1 million workers with ICT skills by 2030.

Engagement

A well-trained and sufficient renewable energy workforce is a major factor of competitiveness for the renewable energy ecosystem and a decisive condition for the manufacturing, deployment and management of Renewable energy technologies needed to achieve the EU energy and climate objectives. In this objective, a Large Scale Partnership on Renewable Energy Skills ("the Partnership") is created. The Partnership will ensure sustainable and systematic sectoral cooperation based on the engagement of all stakeholders involved.

During the first period (2023), the partnership efforts will mainly be addressed to further refine its scope and objectives, analyse the specific needs in each area and identify challenges and bottlenecks for the sector. It will carry out awareness-raising activities, prepare a first set of policy recommendations for the European Year of Skills and seek access to the necessary EU funds (i.e. Erasmus+ Blueprint).

Its main achievements will consist in

- **Understanding of the sector and Skills Analytics**: partners will agree on definitions, subsectors and their structure. Based on available data at global, EU, national and company levels, partners will then gather and consolidate intelligence on current sectoral demographics, skills, employment, and training and will forecast future needs, much like what previous skills partnerships have embarked upon in the past in their specific sector/ecosystem. This will be done in parallel of the Commission's task (as set out in the Green Deal Industrial Plan) to "*work with Member States to set targets and indicators to monitor supply and demand in skills and jobs in the sectors relevant for the green transition*".

- **Ensuring that individuals entering the renewable energy workforce are equipped with appropriate skills** (see above) and ready to face a rapidly growing and constantly evolving environment.
    - **Supporting and reinforcing already existing successful education and training programmes**.
    - **Promoting and reinforcing vocational education and training as well as technical degrees** and **apprenticeship opportunities**
    - **Encouraging and contributing to the creation of upskilling and reskilling training programmes** for workers of the sector, identifying replicable success factors
    - Promoting a modular approach to training, which can be more efficient for acquiring cross-technology competences. A good example is the installation of renewable

energy systems (power and heating and cooling), where some competences are often needed for the installation of different technologies.

- **Exchanging and transferring knowledge of best practices and data on skills gaps and needs for existing and emerging skills in this sector or in general** across Europe, including on supportive policy frameworks.

- Promoting quality careers within the RE sector following values of the Just Transition: working **against discrimination, for gender equality and equal opportunities** and towards the work-life balance expectations of the future workforce**.** In this respect, contacts with workers associations, training platforms, youth organisations and education institutions will be pursued.

- **Promoting innovation within the sector and reinforce its attractiveness for workers.**

- **Providing guidance and recommendations to public authorities:**
    - Calling on **public authorities to incentivise education and trainings related to the energy transition, especially when leading to technical and STEM careers, while making the best possible use of existing EU financing instruments**
    - Calling on **public authorities to revise the financing instrument when possible** to improve their effectiveness at addressing the skills needs;
    - Creating a **dialogue with relevant public authorities in EU Member States**
    - Supporting the strengthened provisions of **Article 18 of the proposal amending the Renewable Energy Directive EU/2018/2001[7] on qualified renewable heating and cooling system installers** and calling on Member States to implement swiftly these provisions by making sure that adequate measures and incentives are put in place.

- **Creating synergies with all other relevant large partnerships for skills** (as in the offshore RE sector etc.) **as well as pan-European projects** and initiatives in the RE field (e.g., SkillBill etc.) and other relevant ecosystems such as transport and building.

7 Proposal for a Directive of the European Parliament and of the Council amending Directive (EU) 2018/2001 of the European Parliament and of the Council, Regulation (EU) 2018/1999 of the European Parliament and of the Council and Directive 98/70/EC of the European Parliament and of the Council as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652, COM/2021/557 final, which provides that "Member States shall ensure that trained and qualified installers of renewable heating and cooling systems are available in sufficient numbers for the relevant technologies".

- Shaping and updating **policy recommendations** to enable the implementation of the outcomes from the partnership's work.

Key Performance Indicators

- Coverage of the Partnership: number of organisations involved in the partnership/ number of countries/regions represented in the Partnership.
- Communication/dissemination events: number of events promoting the Partnership carried out within the framework of the Pact for Skills and under the EYS 2023 and beyond. Communicating the challenge of skills and workers shortages in renewables, and number of other communication/dissemination activities such as joint statements and campaigns, social media actions…
- Skills intelligence: number of skills needs assessments produced at European, national and/or sectoral levels.
- Upskilling and reskilling actions: number of participants in education and training actions (considering the levels of training, gender, age, geographical balance)
- Number of new training models and tools, including pilot initiatives.
- High-level meetings: number of meetings with EU, national or local officials and policymakers to discuss the partnership's policy recommendations.