Staffing tomorrow's railways:
STAFFER and Skills for future mobility

Every day, rail professionals go to work to design, build and operate our rail transport systems. Unfortunately, at this moment, this community is struggling as the workforce on average approaches retirement and digital trends demand increased competencies.

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To welcome new colleagues and ensure continued growth of existing ones, the rail sector must re- and up-skill workers capable of building, staffing and maintaining a Europe-wide rail system capable of living up to the digital and sustainable ambition of the European Union as inscribed in the European Commission's Green Deal, Smart and Sustainable Mobility Strategy and elsewhere. To address this problem and prepare Europe for the next generation of mobility, 32 stakeholders from across the rail sector have joined together under the Skill Training Alliance For the Future European Rail system (STAFFER), an Erasmus+ Blueprint for Sectoral Cooperation on Skills. The programme seeks to identify skills needs, assess and adapt currently available instructional courses from Vocational & Education Training (VET) institutions and technical universities to tailor them to future transportation needs. European Commissioner for Jobs and Social Rights Nicolas Schmit has described as VET as "the solution that people are looking for" in our shared goal to reach carbon neutrality.

This decision was not taken lightly and reflects an urgency for creating a next generation of professionals central to our shared vision of an industrial and sustainable European Union. At the end of 2019, following discussions held within the European Commission Expert Group on the Competitiveness of the EU Rail Supply Industry, the Commission shortlisted the rail industry as 1 of 6 sectors in need of the creation of a skills alliance or a "Blueprint". The latter term describes an EU-funded framework for strategic cooperation between key businesses, trade unions, education and vocational training stakeholders and public authorities. UNIFE members are well-represented in the consortium: Alstom, CAF, Hitachi, Siemens, MAFEX and FIF. The aim is to support an overall sectoral skills strategy and develop concrete actions to address short- and medium-term skills needs.

After several months of preparation, the 32 partners submitted their proposal for a European project in February 2020. The Commission announced during the summer of 2020 that the project had been approved to be the future Blueprint for our sector. Coordinated by the University of Genoa, led by Professor Angela Di Febbraro, our alliance officially started in November 2020 and will last until 2024 – culminating in a list of recommendations to improve and expand curricula needed to meet future sector skills needs.

One of the main challenges we face currently is that women compose only approximately 20% of the rail sector's workforce. A historically male-dominated field, there is much work to be done to provide potential non-male transport professionals with access to well-paid and fulling careers in our field. STAFFER believes that our work is essential to creating pathways that break the glass ceiling and make sure the European rail industry is more appealing and inclusive. Failing to incorporate more women into the talent pool would prove counterintuitive as the EU has positioned rail transport to be the foundations of tomorrow's sustainable economy – as outlined in DG GROW's industrial strategy. Greater diversity and representation within our sector will allow rail suppliers, operators and key stakeholders to fully leverage their unique experiences and expertise to deliver

the transition needed for a next generation EU. But we are not only targeting women in our equation. We need new colleagues, not only because of the ageing challenge that Europe faces but, also taking into account the youth unemployment issue that is a reality in several European regions – currently at a 16.7% average in Europe and exacerbated by the pandemic. This logic is applicable to matters that extend beyond gender to race and class with implications for cohesion.

The question is: what skills will these future rail professionals need to seize this important moment? In the first phase of our work, STAFFER experts analysed skills and competences needs that the rail sector is currently lacking and those that it will need to achieve EU goals. While assessing suppliers needs, it was found that tomorrow's public transport will see greater demand for urban mobility solutions - especially in cities and congested areas and increased integration of new technologies - among other needed reforms in line with market realities. Similarly, operators concurred with these finds and highlighted a vision of more pervasive cross-border interoperability.

To allow trains to move seamlessly across borders and end users to make optimal use of a matrix of mobility options, European rail stakeholders and their colleagues will need to possess a diverse set of skills and the ability to ingest new knowledge sets that will help them make the most of emerging technologies. Just as our industry is making use of artificial intelligence, digital twins, geospatial imaging, and more, STAFFER is looking to see what new applications will best serve our sector in the future and how to best integrate them into current curricula.

In line with the findings of the earlier mentioned Expert Group, the STAFFER findings identified supplier and operator needs and highlighted the need to direct more educational focus towards applications such as systems engineering, cloud-based signalling, cybersecurity, remote condition monitoring, virtual reality simulators/trainers, big data analysis and language acquisition. All of these competencies will be required as rail professionals will be needed to build and operate systems ranging from automatic trains to the European Rail Traffic Management System (ERTMS) across EU Member States as diverse from Portugal to Estonia.

Unfortunately, at this moment, available educational offerings differ drastically across Europe. In a benchmarking exercise that surveilled Italy, Germany, Belgium, France, Greece, Spain, Czechia, the Netherlands, Austria, Luxembourg, Serbia and Poland, STAFFER experts found that some had excellent and varied education programmes while some had none at the tertiary education level. For instance, while German educational providers offered "a wide range of training opportunities related to the railway sector, where the combination of dual education is particularly noteworthy", Italian, Spanish and Dutch schools had very few options at either its universities or vocational education centres. STAFFER hopes that its recommendations, are consistently applied across the EU Member States as it is a prerequisite for a full shift to less carbon intensive modes of transport and an equal participation in the envisioned European future. Consortium experts believe that new and emerging training tools and methods such as e-learning, virtual/augmented reality, gaming environments and blended learning among other teaching practices can help make rail training more pervasive and more appealing to students. Introducing new tuition methods and wider availability of relevant curricula are critical to correcting the existing skills shortage and ensure that rail is properly staffed to fulfil its intended role in the next generation of the European Union.

Europe is at the precipice of transformational era and rail is the backbone of transforming our societies and economies. Policy and decision-makers have tasked industry with crafting solutions to some of its greatest challenges: climate change, economic stagnation, resiliency and inequity. Europe's railways represent the least carbon intensive mode of mass transit, contributing only 0,4% of the transportation sector's considerable greenhouse gas emission. Becoming a leading climate actor will drastically change life in Europe and people of all backgrounds must lend their lived experiences for it to be successful. Together, STAFFER and the wider rail sector is working to prepare the next generation of rail professionals for a future that will rely on their skills. With proper training, these dedicated students and transitioning professionals will help transform the mobility preferences of Europeans and, in turn, their lives. Let's make it happen.

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