Approaches and Strategies in Favour

As the *image* of energy-intensive industries is a major hurdle and challenge in recruiting talents, a more realistic image needs to be conveyed: from an outdated, old, dirty, dangerous industry towards a digital and green industry. A *new narrative* for energy intensive sectors should emphasize the efforts with regard to the digital transformation and decarbonization and the strong willingness of energy intensive sectors to become more energy efficient. As *digital and green innovative and open sectors, they are part of the societal solution for climate change*. Challenge lies in demonstrating to the public the importance of these industries, while at the same time showing that talent is urgently needed to shape future transformations. Against this backdrop, creating motivation and possibilities for (new) applicants to engage in energy intensive sectors and to initiate change processes should be fostered. Potential applicants consequently have the opportunity in energy-intensive industries to design the *needed solutions for the future* and thereby make a positive contribution to the green transformation. Furthermore, the positive impact of energy intensive industries as important and sustainable components of social prosperity should be emphasised. In other words, *more visibility of the contribution of energy intensive sectors to a modern and green society is needed, as only with the transformation of these industries change can be brought about*. This requires a new European and national industry strategy (see German Steel Action Plan 2020 ‘For a strong steel industry in Germany and Europe’; Federal Ministry for Economic Affairs and Energy, 2020).

At the same time, working conditions should also be modernised, for example following the example of the technology and IT sector: improving work-life balance of employees, lower hierarchies, etc. (Echterhoff & Schröder, 2015). Rethinking of recruitment within the industries should, aside from higher educated people, also comprise vocational educated people, with an increase in efforts to integrate neglected target groups (e.g. female workers, migrants) with attractive training and upskilling possibilities (e.g. for migrant workers) for on-boarding and lifelong learning. Last but not least, young people's ideas and ways of thinking should also be included and considered to a greater extent. It thereby needs to be considered that ambitions, demands and mindsets of the young generation differ from the previous generations.

Against the background of IS improvement, *regional integration* is particularly important via the connections to regions by Corporate Social Responsibility (e.g.: urban IS, using cleaned water for communities, connect industrial sites and heat parts of a city with produced heat) but also by finding common solutions (e.g. pipelines for transport of heat and gas, better connections to urban infrastructure). Smart cities should integrate the value of industry’s contribution to their ecosystems.

Internships and open-door events as means to convey a realistic image of industry, also for people at a young age, are already in place and should be fostered on the regional level, where people live, learn and work. But companies could not manage the transformative change alone. Therefore, all relevant stakeholders with their own responsibilities are in charge. Improving *relationships and cooperation* of companies with universities, the VET system and secondary schools is needed, as well as public support to increase positive impact on the image of energy intensive sectors. This should lead to improved knowledge among potential applicants about industry, while also fostering a better response to industry needs by educational institutions (creating closer relations to the surrounding communities).

Against this backdrop the *lack of suitable applicants* in the field of Industrial Symbiosis should be solved by balancing (new) people with fresh ideas with experienced company staff, working in teams. However, imparting skills and knowledge internally (with a focus on in-house talents) is the most suitable and realistic way recently in order to avoid a war for talents and to retain talents in the company. This needs more specific courses, especially in the field of industrial symbiosis, on the job and online. In this respect, SPIRE-SAIS contributes with its training courses to raise awareness and introduce the topics of Industrial Symbiosis and Energy Efficiency for employees in various industries.

As company structures oftentimes pose challenges, these changes need to come step by step, for the adaption of new structures and learning arrangements to succeed.

Please find further information on this topic in the SPIRE-SAIS Deliverables:

- D1.5 Final Report
- D5.3 Blueprint New Skills Agenda Energy Intensive Industries
- D6.2 Piloting and Implementing the Blueprint