

# Skills Alliance for Industrial Symbiosis

## A Cross-Sectoral Blueprint for a Sustainable Process Industry - SPIRE-SAIS

SPIRE- SAIS WP4 analyses the **supply side of the skills** related to **industrial symbiosis** (IS) and **energy efficiency** (EE). The final objectives of the report “*Mapping of current VET provision for industrial symbiosis and energy efficiency skills of the EIs sectors in selected member states*” is to

- answer how vocational education and training (VET) systems at national and EU level currently deliver skills concerning cross-sectoral industrial symbiosis and energy efficiency of the energy intensive industries (EI) sectors involved;
- identify where non-formal company level VET attempts to close skills gaps in formal (state) provision.

In the final version report D4.1. will establish the reference points and main mechanisms for and barriers to skills/ training delivery in the European EIs.

### National VET Systems of Countries Selected for In-Depth Analysis



#### Company-oriented VET

In **Spain** VET includes the teaching provided in vocational education and the training in the education system and Vocational Training for Employment. Both of them cover the vocational integration and reintegration schemes for workers, and schemes oriented towards continuous training in companies enabling the acquisition and continuous updating of occupational skills.



#### Regional general VET education

VET programmes are designed by regional governments, but they do follow nationally agreed standards. Despite historically being school based, the system is now offering students more opportunities for **hands-on learning** by introducing the option of apprenticeship-style delivery for most **IVET** programmes. Training opportunities for adult learners follow no standardised pattern but provide progression opportunities for the low-skilled and relevant training to meet industry needs.



#### Apprenticeship-based VET system

Apprenticeship is systematic, with long-term training alternating periods at the workplace and in an educational institution or training centre. **German apprenticeship-based VET** system is often praised for the fact that it not only educates young people but also helps to keep very low levels of youth unemployment. At the same time, it allows businesses actively benefit from apprenticeships, which become ‘*the best form of personnel recruitment*’ for them.





**Centralised school-based VET**

**Portugal** offers formal vocational education and training within secondary, post-secondary, and tertiary education as well as for adults who are no longer part of the education system. With this approach, students gain sociocultural awareness, theoretical technical knowledge as well as practical training, while also being incentivised by scholarships for work-based learning, travel allowances, and accommodation grants. Adults of any level of educational attainment have upskilling opportunities available to them.



**Centralised school-based VET**

The **Polish VET system** is in the process of shifting towards the involvement of more practical components (e.g.: internships and apprenticeships) and more companies into the training process. At the moment, however, practical components remain largely school based. Adult training occurs outside of the school system and includes vocational qualification courses, training in crafts, specialised programmes for employees as well as unemployed and other vulnerable groups.



## GOOD PRACTICES OF IS AND EE RELATED SKILLS PROVISION: **POLICY LEVEL**

**The ‘Sustainability in Vocational Education’ initiative of the BIBB (Germany)** is a sustainability initiative that among other things develops new learning modules, new VET curricula and updates existing ones to include environmental awareness, green skills, sustainability, and circular economy. The initiative also developed didactic materials such as guidelines on sustainability at work and in production processes. While the focus of this initiative was not exclusively on the EILs, many of the new learning modules, curricula, and materials do concern EILs-relevant occupations.

**Empleaverde (Spain)** is a government initiative with the aim of supporting the transition of companies and jobs towards the green and ‘blue’ economy. Within the scope of this initiative, Spain’s largest knowledge sharing platform targeting green entrepreneurship was founded. Free trainings for entrepreneurs with green business ideas were drawn up, and socially innovative trainings for job seekers focusing on employability in the green and blue economies were tested.

**ENSPOL (EU and Poland)** was funded by the EU and aimed at assisting EU Member States in establishing or improving existing Energy Efficiency Obligation Schemes (EEOs) or similar policies that would allow those Member States to reach mandatory energy saving targets. The project not only produced and implemented traditional trainings, such as developing guidelines or holding conferences and workshops, but also tried more innovative training solutions like training relevant decisionmakers or a comprehensive one-stop-shop web platform for all stakeholders. The educational activities included different stakeholders who are relevant for the creation and implementation of the meaningful energy saving solutions, including representatives of EILs.



## GOOD PRACTICES OF IS AND EE RELATED SKILLS PROVISION: VET LEVEL

**Green Jobs in the Metal Industry (Germany – VET/company level)** was a project implemented by a transnational consortium with relevant expertise and focused on developing green skills and jobs in the German state of Brandenburg and securing businesses and jobs in the local metal industry. The project developed upskilling schemes for green skills, based on a thorough evaluation of which green skills and jobs were relevant for the industry. These upskilling schemes taught awareness and some relevant green skills to participants. The rationale was that participants would spread the word about green skills in their companies.

**Training programmes of AENOR about Circular Economy (Spain)**. Being the Spanish Association for Standardisation and Certification, AENOR has been conducting various trainings aimed at companies and individuals. Amongst those trainings there have been online courses, in-company trainings, and classes on IS-relevant contents such as circular economy, energy management, and environment management.

**JECE - Junior Expert in Circular Economy (Italy)** is a pilot VET programme that is formally embedded into the Italian VET system. After completing this one-year course graduates will be able to understand the basics of circular economy, how to evaluate the life cycle of products, and (re)design products and businesses that fulfill the highest environmental standards. The programme is recognized EU-wide as it is taught entirely in English and is referenced to EQF, ECTS, and ECVET.



## GOOD PRACTICES OF IS AND EE RELATED SKILLS PROVISION: COMPANY LEVEL

**Symbiosy's Readiness Assessment Tool and INSIGHT. Training courses preparing FACILITATORS of IS (Spain)**. Symbiosy is a consulting firm specialising in circular economy and industrial symbiosis. As such, Symbiosy have developed an online management tool for the effective management of resource consumption and waste production (SÍNER) as well as training programmes aimed at professionals, including those from the EILs. These programmes convey basic concepts and approaches to industrial symbiosis and prepare participants to become so-called FACILITATORS of IS. The INSIGHT project is an extension of their training programmes as it seeks to develop standardised training curricula for this professional profile.

**ISQ and its Compromise with Sustainability (Portugal)**. ISQ is a private company providing among other things consultancy on sustainability. Some notable projects include the development of an online platform for monitoring the efficient use of resources and a project on making water supply systems more efficient. As part of such activities, ISQ conducts training activities such as webinars, workshops, summer schools, etc and makes relevant activities available through its own Online Academy Training Catalogue.

**International-Synergies' training courses (EU-level)** are designed to build companies internal capabilities through the application of industrial symbiosis in order to increase productivity, reduce costs, develop new business opportunities and improve overall environmental performance. Courses range between refining practical skills, such as effective collection of resource/material data in order to increase resource efficiency and productivity, to high level mentoring on applying industrial symbiosis methodology and tools.

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