ESSA
EUROPEAN STEEL SKILLS AGENDA

Funded by the
Erasmus+ Programme
of the European Union

Blueprint “New Skills Agenda Steel”:
Industry-driven sustainable European Steel Skills Agenda and Strategy (ESSA)

National VET System Strategies for the Steel Industry of Tomorrow POLAND

Wojciech Szulc, Józef Paduch
Łukasiewicz – Instytut Metalurgii Zelaza (IMZ)
wszulc@imz.pl, jpaduch@imz.pl

ESSA Mid-term Conference 27 & 28 of May 2021

Content

Steel sector in Poland

Skill and qualification profile of the workforce

Polish VET system

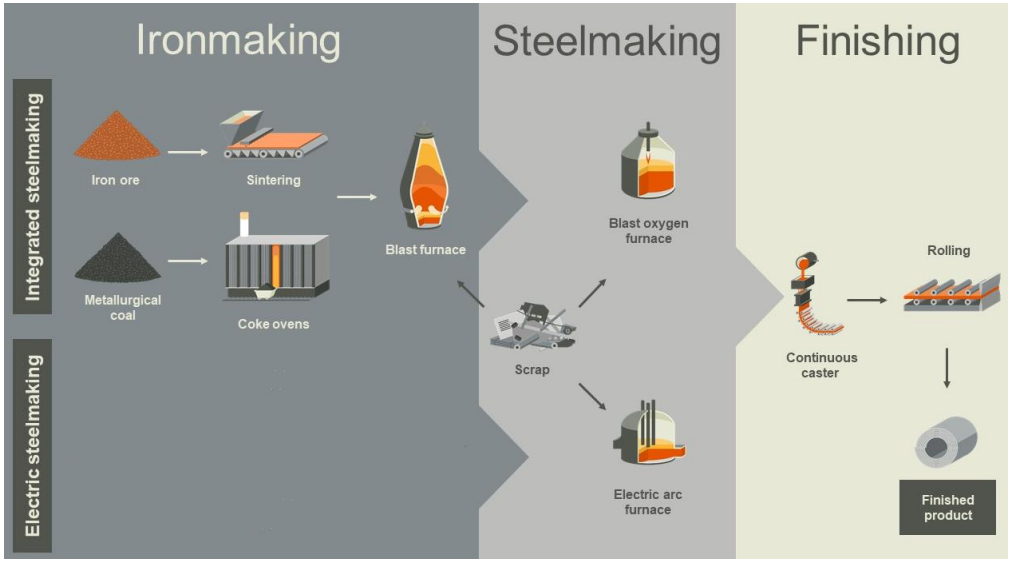
Steel sector in Poland

ESSA
EUROPEAN STEEL SKILLS AGENDA

Steel sector in Poland

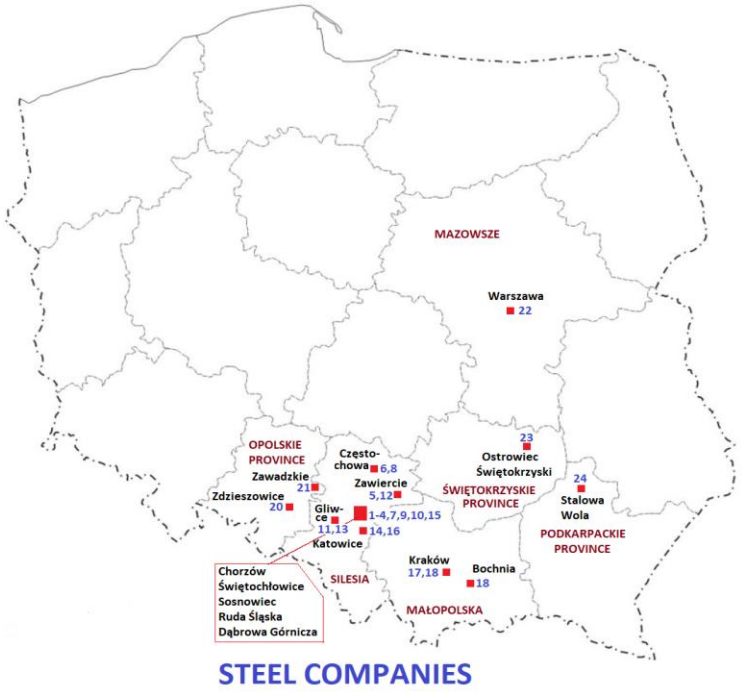
Steel sector in Poland consist of three types of enterprises:

- integrated steel plants manufacturing steel from iron ore in BF + BOF route and then processing it into steel products – **2 plants**
- steel plants manufacturing steel from steel scrap in EAF route and then processing it into steel products – **7 plants**
- re-rollers: steel plants processing steel delivered from outside into steel products – **14 plants**



Steel sector in Poland

Steel sector is localized mainly in south part of Poland which could be called Polish Steel Region. This Region has 6 sub-regions: Silesia, Małopolska, Świętokrzyskie Province, Podkarpackie Province, Opolskie Province and Mazowsze.



Steel sector in Poland

Characteristic of the sector:

- production capacity 13 million tonnes per year (in terms of Maximum Possible Production MPP)
- production 9 million tonnes in 2019
- workforce 24,700 people in 2019

Skill and qualification profile of the workforce

Skill and qualification profile of the workforce

- Historically, in times of economy centrally planned (communist), Poland had a fairly good developed system of schools and VET schools system tailored to the needs of to the current needs. After the political transformation in 1989 it was considered that the education system, including the VET system, requires a deep reform.

- In the 1990s, there was a "dismantling" of a vocational education system. Teaching on the secondary level was mainly a general one and to a lesser extent vocational. This situation was even more clearly in relation to the steel industry, in connection with freezing the recruitment of employees by this restructuring sector for over 10 years. As a result, there was a disturbance of the natural process of transferring the knowledge to new employees within steel companies, and at the same time lack of interest to learn in metallurgical professions and reducing candidates to work in this industry. From 2010, the remaining companies on the Polish market were forced to deal with preparation of the workforce, retraining the surplus of its employees in accordance with the needs of technological progress and changes in the labour organization system. In adapting to changes in such enterprises and employees allowed vocational training and broadly understood development of professional qualifications, organized at the level of individual enterprises and the most frequently financed by employer's own resources, without actions at the sector level or in cooperation between enterprises.

ESSA
EUROPEAN STEEL SKILLS AGENDA

Skill and qualification profile of the workforce

- The restructuring of the workforce was aimed at improving the qualitative structure of staff - a highly specialized staff with a different level of education and various professions. Qualitative changes included acquisition of new technical skills (support for computerized equipment), organizational (improvement of work organization), decision-making (initiating changes, participation in projects), conceptual (problem solving), interpersonal (work in teams) and other contributing to the success of the company (building the value of the company by involvement of employees).
- In recent years, no detailed research and analyzes on employment issues in the steel sector in Poland have been carried out. In particular, there are no reliable results of the evaluation of the professional structure and qualifications and skills of employees of the metallurgical industry.
- New graduates educated in new VET system after educational reform from 2016 will enter to the labour market in the years 2023 / 2024.

ESSA
EUROPEAN STEEL SKILLS AGENDA

Skill and qualification profile of the workforce

- In Poland, the vulnerability is clearly marked in the area of competences related to knowledge and use of information and communication technologies. Graduates of higher studies relatively quickly find a job compared to people with lower levels of education. On the other hand, what employers indicate, often do not have competence "ready to work", but the skill and readiness of learning that allow them to be relatively quick acquisition as part of learning at work. Adjusting the labour market also favours the growing number of graduates starting their professional activity.
- Deficiency of skilled workers for steel sector on the labour market illustrates ads about sought-after employees. The seekers show the required qualifications and skills that indicate their current level in metallurgy.

ESSA
EUROPEAN STEEL SKILLS AGENDA

Skill and qualification profile of the workforce

- Examples:
  - ArcelorMittal Warszawa was looking mainly for people with technical education, preferably at secondary and higher level. First of all, it needed employees for production departments (including equipment operators, crane operators) and maintenance (including mechanics with welding skills, plumbers, electricians). Candidates should be open to changes, their own initiative and creativity, as well as the ability to work in a team. Raising professional qualifications and acquiring rights is usually carried out through external training. Internal training is aimed at developing competences in a given position, e.g. improvement in the rolling process or in the operation of equipment in the finishing shop can only take place in the steelworks. A newly hired employee is assigned to an experienced person who provides him with the secrets of knowledge.

ESSA
EUROPEAN STEEL SKILLS AGENDA

Skill and qualification profile of the workforce

- CMC Poland was looking mainly for:
  - **crane operator - scrap classifier**:
    - required education: secondary / vocational education;
    - required skills: the ability to make decisions and work under stress; conscientiousness; responsibility; commitment; operate the crane from working level, hook permission
  - **locksmith**:
    - required education: technical vocational education;
  - **electro-mechanic:**
    - required education: basic or secondary technical vocational education (electrician technician is welcome);
    - required skills: ability to read technical documentation and technical drawings of electrical, hydraulic and mechanical systems; knowledge of diagnosing PLC controllers (program configuration)
  - **automatic:**
    - required education: minimum secondary vocational education with an electrical / electronic / IT profile
    - required skills: ability to read electrical diagrams: knowledge of the construction and operation of mechanical components such as gears, clutches, mechanical brakes; knowledge of electric drives and automation; knowledge of the operation of frequency converters (ABB); ability to work under time pressure and make independent decisions under stress; ability to solve problems; communicativeness

ESSA
EUROPEAN STEEL SKILLS AGENDA

Skill and qualification profile of the workforce

- In Poland, there is a shortage of the following employees with skills and qualifications to work in the steel industry at the education level EQF3, EQF4, EQF 6 and EQF7:
  - metallurgist,
  - roller,
  - turner,
  - blacksmith,
  - locksmith.

Polish VET system

Polish VET system

- The Polish education system, including the VET system, has been reformed several times in the last few decades. This was related to the ambition to build better education system than the communist governments had provided. Unfortunately, these reforms did not meet expectations, and the VET system collapsed in the late 1990s.
- The main aim of the reform from 2016 is to restore the prestige of vocational education by improving its quality and effectiveness. Special emphasis is placed on strengthening the mechanisms of involving employers in the development of VET in all its stages, particularly in practical vocational training and on the systematic adaptation of VET to labour-market needs by forecasting the demand for professions and skills.
- Developing a vocational education system that is responsive to the needs of a modern economy is also very important.

ESSA
EUROPEAN STEEL SKILLS AGENDA

Polish VET system

- According to the assumptions of the reform, the target structure of schools includes:
  - 8-year primary school,
  - 4-year general high school,
  - **5-year vocational upper secondary school**,
  - **3-year first stage sectoral school,**
  - **2-year second stage sectoral school,**
  - **3-year special job-training school,**
  - **postsecondary school**.

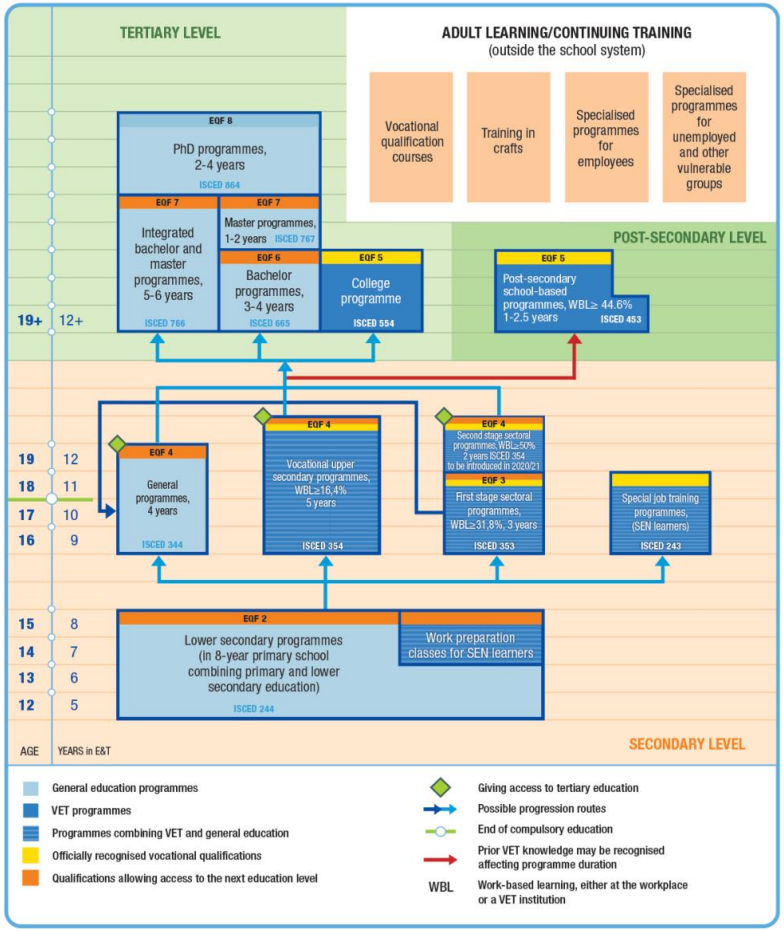
Polish VET system

- The new law in relation to the VET system:
  - **makes it mandatory for VET learners to pass a State vocational examination or a journeyman's examination to graduate from secondary education**; it also changes the form of exams, the process of preparing examination tasks, and the requirements set for examiners;
  - **introduces**, in cooperation with employers, **apprenticeship as a new form of vocational learning** for learners in upper secondary VET and first-stage sectoral programmes, who are not juvenile workers;
  - **introduces new options for VET learners to obtain additional vocational skills or qualifications beyond the core curriculum**;
  - **allows VET schools to organise short-cycle vocational courses for adults**;
  - **makes it mandatory for schools to cooperate with employers when launching new programmes**; this cooperation may include patronage classes, the organisation of practical training, teacher training, participation in the organisation of vocational examinations, providing schools with certain equipment and participation in teachers' council meetings;
  - **introduces obligatory professional training for VET teachers in companies**;
  - **introduces a labour-market-needs forecast mechanism**; forecasts will take into account various data sources, including data from Statistics Poland, education information system, social insurance data and opinions of skills councils;
  - **increases state subsidies to local governments for VET schools** educating in higher demand occupations and to employers involved in training VET students in higher demand occupations;
  - **introduces the functioning regulation of the newly-established second-stage sectoral programmes**;
  - **introduces changes in the accreditation system for institutions providing continuing education** in out-of-school forms, aimed at greater quality control.

ESSA
EUROPEAN STEEL SKILLS AGENDA

Polish VET system

- The CEDEFOP ilustration of Polish VET system.



NB: ISCED-P 2011.
Source: Cedefop and ReferNet Poland, 2019.

Polish VET system

- Upper secondary education can be provided by different types of schools and take the form of a general upper secondary four-year programme (licea ogólnokształcące), a vocational upper secondary five-year technical programme (technika) or a three-year first stage sectoral programme (branżowa szkoła pierwszego stopnia), which can be followed by a two-year second stage sectoral programme. Upper secondary education is typically available to primary school graduates (usually 15 year-olds), apart from the second stage sectoral programme, which will be available to graduates of the first stage programmes (18 year-olds).
- Post-secondary non-tertiary programmes are provided by post-secondary schools (szkoły policealne) and can be attained in one- to two-and-a-half years. They are available to graduates of general and vocational upper secondary programmes, as well as in the future – of second stage sectoral programmes (usually 19-20 year-olds).

ESSA
EUROPEAN STEEL SKILLS AGENDA

Polish VET system

- Each qualification includes specific sets of learning outcomes defined in the core curricula for vocational education. Learning outcomes are grouped in units, which typically contain from several to over a dozen learning outcomes and reflect specific professional tasks. The core curriculum for general education determines the learning outcomes related to the general education component and key competences provided by VET programmes.
- Formal VET leads to four qualification levels (2 to 5) that are the same as in the European qualifications framework (EQF).

Polish VET system

- The VET system comprises initial and continuing education. It can be offered as:
  - school-based programmes with obligatory work-based learning (WBL differing in scope and form, also including dual training/alternate training),
  - juvenile employment (apprenticeship scheme – with practical training with employer and theoretical training in school or in out-of-school forms, based on a contract between the learner and the employer),
  - out-of-school forms – different types of courses based on the core curricula.
- VET has three governance levels: national (ministries), regional (school superintendents, mainly in pedagogical supervision) and county (powiat – managing schools). The education ministry is in charge of VET policies at secondary level, supported by other ministries responsible for particular occupations. The Ministry of Science and Higher Education is responsible for higher VET. Social partners advise policy makers on necessary changes in VET.

ESSA
EUROPEAN STEEL SKILLS AGENDA

Conclusions

Conclusions

1. The Polish steel sector is one of the largest in the EU. In 2019, Poland among European producers was classified in 5th place with the production of crude steel 9.0 million tonnes – 5.7% share in EU(27) crude steel production.
2. From the perspective of the labour market, the mismatch of demand for competences and their supply in the case of persons with medium vocational (EQF4), basic vocational (EQF3) and general education are clearly visible.
3. The new and currently implemented education system, including the VET system, raises hope for the creation of a system in Poland that will provide appropriate theoretical and practical education corresponding to the needs of the market, also in terms of the needs of steel plants.

ESSA
EUROPEAN STEEL SKILLS AGENDA

Conclusions

4. This system creates the right conditions to meet the current skill needs of industry, but it will be possible to assess this only after the reform is fully implemented, i.e. after 2023.
5. This system will also be able to meet future skill needs, but it will require good and close cooperation with the industry, which should formulate these skill needs in advance. There is no such cooperation yet.

ESSA
EUROPEAN STEEL SKILLS AGENDA

Funded by the Erasmus+ Programme of the European Union

Agreement Number: 2018-3059/001-001
Project Number: 600886-EPP-1-2018-1-DE-EPPKA2-SSA-B

ESSA website: https://www.estep.eu/essa

Follow us on and