National report on the situation of VET regarding green jobs in Bulgaria

What is the situation on vocational education in partner countries about the green jobs?

A ½ page info about your general VET system.

The two bodies responsible for Vocational Education and Training (VET) policy development are the Ministry of Education and Science and the Ministry of Labour and Social Policy .

The Ministry of Education and Science carry out the national policy in the field of education and science; organizes the development and the implementation of the national programmes for secondary and higher education development, programmes for qualification and re-qualification; coordinates the implementation of national programmes and projects in the field of research, development and implementation of sectorial programmes for equal access to education, integration in education and training, lifelong learning, information and communication technologies in education; development and implementation of the national policy for qualification and career development of teachers; development and implementation of state educational requirements, development of educational programmes and training materials, development and application of national examination programmes, methodical assistance of school and kindergarten activities, coordination, control and inspection of activities related to pre-school and school education and outdoor activities, etc.

The Ministry of Labour and Social Policy participates in the implementation of the state policy on vocational education and training by identifying the needs of vocational education and training trough analyzing trends in the labour market; participates in the development, coordination and updating of the state educational requirements for acquiring of qualification in professions; participates in the coordination of the List of Professions for vocational education and training; determines the requirements for health and safety conditions in practical training and supervises their implementation trough the regional labour inspectorates; participates in the coordination of the state plan for admission to schools through the regional employment services; participates in the organization of vocational guidance; participates in the governing board and the expert committees of the National Agency for Vocational Education and Training with its representatives.

The Ministry of Labour and Social Policy and the Ministry for Education and Science are both responsible for adult education and training, which can be considered as Continuous Vocational Education and Training (CVET). The Minister of Labour and Social Policy together with the Minister of Education and Science develops and coordinates the state policy on adult training, creates conditions for the assessment and recognition of knowledge, skills and competences acquired through non-formal training and informal learning and identifies, analyzes and forecasts the condition, the development and the needs of training for adults.

The National Agency for Vocational Education and Training (NAVET) is a national authority to the Council of Ministers, which is responsible for licensing of activities within the vocational education and training system, as well as for coordination of the institutions related to vocational guidance and vocational education and training. The main functions of the NAVET are connected to issuing and suspension of permits for provision of vocational training and guidance services, execution of control on the activities carrying out by the licensed vocational training centers and licensed information and vocational guidance centers, elaboration of a List of Professions for Vocational Education and Training, elaboration of the State Educational Requirements for acquisition of qualification by professions, etc.

The Vocational Education and Training Act – VETA (1999) is the basic law, which regulates the vocational education and training system, incl. continuous vocational training in terms of organization, institutions, management and financing.

According to the VETA, the vocational education and training system includes vocational education, vocational training and guidance. The guidance part provides information, consulting and counselling of students and other individuals concerning the choice of a profession and career development. The vocational training part ensures the acquisition of a vocational qualification or of a partial vocational qualification, and continuous vocational training. The vocational education includes initial vocational education – for acquisition of an initial qualification by profession or part of profession. The vocational education part ensures the assimilation of the general education minimum for secondary education and the acquisition of a vocational qualification.

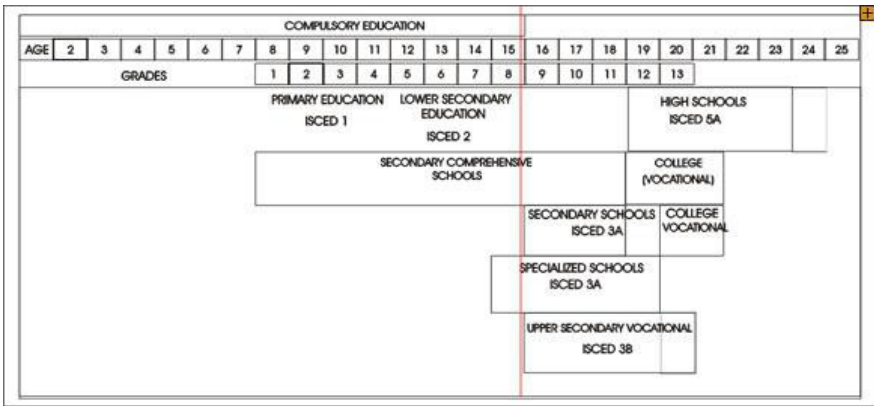
The law sets the requirements with respect to the candidates, who wish to be included to attend vocational education and training programmes, in terms of minimum age, wellbeing, input level of education and input level of qualification. It determines the Frame Programmes for vocational training of students and individuals aged 16 and above, and the requirements towards them. This law defines the vocational education and training institutions offering vocational training for adults. It also sets the ways for graduation and certification of vocational education completed.

The VET Act provides an opportunity for those who wish to certify their knowledge and skills, which are acquired in the process of practicing a given profession.

The main national strategic documents in the field of Lifelong Learning (LLL) are:

- School and pre-school Education Development National Programme 2006-2015: This document determines key curricula goals for pre-school and upper secondary education in Bulgaria. It emphasises the widening of access to education and the opportunity for LLL programmes;
- National Strategy for Lifelong Learning 2008-2013: This document aims to define the national priorities for development of LLL in Bulgaria. Better access, quality of training, and institutional and social partnerships are emphasised;
- National Strategy for LLL (2014-2020) sets out the strategic framework of the state policy in education and training during the period, which aims at achieving the European goal for smart, sustainable and inclusive growth.

Bulgarian education system



Vocational education and training is obtained in:

- vocational schools
- vocational secondary schools, technical schools, which are under the administration of The Ministry of Education, Youth and Science2 (MEYS)
- vocational training centres, licensed by the National Agency for Vocational Education and Training;
- companies, which provide more than two thirds of the non-formal lifelong learning opportunities in Bulgaria3;
- non-government organizations which provide non-formal trainings in various fields.

Types of education institutions

Gimnazia (Upper secondary school)	4 years	9th to 12th grade
Sredno obshtoobrazovatelno uchilishte (General secondary school)	12 years	1st to 12th grade
Profilirana gimnazia (Upper schools of specialized studies profile)	4 or 5 years	8th or 9th to 12th grade
Profesionalni uchilishta (Vocational schools)	4 or 6 years	6th to 12th grade
Professionalni gimnazii (Vocational secondary schools)	4 or 5 years	8th or 9th to 12th grade

TABLE 1: THE EXECUTIVE BODIES WITHIN THE SYSTEM OF VOCATIONAL EDUCATION AND TRAINING

N	schools	provide
1	Vocational schools	Initial vocational training and the acquisition of the first and second degree (връзка към обясненията)of vocational qualification and a partial professional qualification. Students who have successfully completed sixth grade are admitted in these schools.
2	Vocational secondary schools	Vocational education and the acquisition of the second and third degree of vocational qualification. The vocational secondary schools may also conduct vocational training and the acquisition of the first, second and third degree of vocational qualification and a partial professional qualification.
3	Art schools	Students with completed lower secondary education are admitted in these schools. Vocational education and acquisition of the third degree of vocational qualification. Students spend up to four years there after the lower secondary education.
4	Vocational colleges	Vocational education and acquisition of the fourth degree of vocational qualification for individuals with completed secondary education.
5	Vocational training centres	Vocational education to individuals who have at least 16 years old.
6	Information and Vocational Orientation Centres	Service of vocational orientation for students and other individuals.

Source: Authors

What are the measures taken in your country's VET strategy for energy efficiency? (Which skills reidentification, change in moduls, Etc.) (We mean what do the authorities in your country do in your VET system for green skills) (Changes in legislation) (max 1-2 pages)

Energy Strategy of the Republic of Bulgaria: impacts on the energy efficiency practices and the construction sector

The Energy Strategy of the Republic of Bulgaria until 2020 is a fundamental act of the national energy policy, which is approved by the Council of Ministers and is passed by the National Assembly of the Republic of Bulgaria.

The present national energy strategy reflects the political vision of the Government concerning the European development of Bulgaria in alignment with the current European framework of the energy policy and the global trends in the development of the energy technologies.

The energy strategy is oriented towards overcoming of the main challenges for the Bulgarian energy sector at the present moment, namely:

- The high energy intensity of GDP. Despite the positive trend of improvement, the energy intensity of the national GDP is by 89% higher than the EU average (with due account taken of the purchasing capacity parity);
- The high dependence on import of energy resources: Bulgaria provides 70% of its gross consumption through import. The dependence on imported natural gas, crude oil and nuclear fuel is practically overall and there is a traditionally one-sided orientation to the Russian Federation;
- The need of environmentally-friendly development.

The major priorities of the Energy Strategy of the Republic of Bulgaria in the context of the European energy policy have been reflected in five directions:

- To guarantee the security of energy supply;
- To achieve the targets for renewable energy;
- To improve energy efficiency;
- To develop of a competitive energy market and policy aimed at meeting the energy needs;
- To protect consumers' interests.

On the basis of the above mentioned priorities is formulated also the vision of the Government for development of the energy sector during the coming years, oriented as follow:

- To maintain a secure, stable and reliable energy system;
- The energy sector remains a leading branch of the Bulgarian economy with a clear cut export orientation;
- Emphasis on clear and low-emission energy - nuclear and from RES;
- Balance in terms of quantity, quality and prices of electricity produced from RES, nuclear energy, coal and natural gas;

- Transparent, effective and highly professional management of energy companies.

Energy efficiency in the actual building codes

Currently, in the Bulgarian building codes there are requirements for U-values of specific building components. The energy performance for each new building is calculated with the referent U-value prescribed by law. The technical documentation for the design of new buildings includes a compulsory estimation of the energy performance of buildings at the design stage and a report done by an independent expert for checking the compliance of the design with the existing energy performance and prescriptive requirements. In case of non-compliance, the permission for constructing the building is not given. Moreover, it is necessary to obtain a technical certificate for the building, issued after construction but before commissioning. If the buildings' energy performance is worse than the energy performance calculated on the basis of the U-values for building components (as indicated by the current legislation), than the building will not be commissioned.

The upcoming legislation transposing the EPBD at national level will ensure that energy performance requirements are part of the building codes. It is also required by the EPBD to relate energy performance requirements to primary energy consumption, in order to have a more accurate picture of the energy quality and related CO2 emissions. This means that the first measure to be implemented will reduce as much as possible the energy demand/need of buildings.

In addition, EPBD requires supplying the remaining energy demand/need of the building by onsite and/or nearby generated renewable energy. This is in line with actual practices in implementing very low-energy buildings such as the Passive House standard which imposes a limit of 15kWh/m²/yr for the energy demand for heating, mainly because this is the energy need that can be covered by most small scale RES installations.

The following table shows the current regulation for new buildings in Bulgaria and the foreseen adaptations towards nearly-zero energy building regulations.

Status quo	• Requirements for U-values for specific building components. The energy performance for each new building is calculated with the referent U-value prescribed by law. • Prescriptive requirements and calculated energy performance are compulsory for issuing the construction and commissioning certificates for a building. • No requirements for compulsory use of renewable energy in new buildings. However, in the Energy Efficiency Law it is mentioned that the renewable energy use should be considered as a possible option during the design phase of the buildings.
Gaps in the implementation of nZEB	• Building codes do not foresee minimum energy performance requirements for primary energy demand and by building type. The energy performance should be calculated case by case and based on prescriptive U-value for components. • There is no obligation to meet certain CO2 emissions

	• There are no specific requirements for using renewable energy in buildings.
What can be improved to achieve the implementation of nZEBs?	• To secure the transition to nZEB in the future, the regulation should be improved. The changes should affect the structure of the regulation and its ambition level. • The structure should be adapted, including clearly defined obligations by building type regarding the primary energy use / CO2 emissions and the use of renewable energy. • The ambition level of the obligations should be tightened over the time.
Intermediate steps	• Start to gradually tighten the energy related requirements for buildings: • Tighten requirements for building envelope (e.g. Energy class A become obligatory for new buildings) • Tighten max. primary energy use • Change structure of regulation

Active support schemes for energy efficiency in buildings

Currently there are several support schemes and programmes addressing energy efficiency and renewable energy heating in buildings in Bulgaria, such as the following:

- Operational program “Regional development”;
- Sub-Program “Introduction of Energy Saving Technologies and Renewable Energy Sources” ;
- SEDA Grants program;
- International fund “Kozloduy”;
- The first and the second EBRD credit lines.

However, all support schemes are targeted only to existing buildings. There is no scheme to specifically support energy efficiency and renewable energy in new buildings. There is a programme for the development of rural areas which supports the construction of new family hotels and guest houses, but this incentive is given without a specific condition for implementing energy efficiency or renewable energy measures.

The following table shows the the current situation of the support schemes and for energy efficiency in buildings and foreseen adaptations towards nearly-zero energy building regulations

Status quo	• All support schemes for the implementation of energy efficiency and RES measures in buildings are exclusively targeted to existing buildings.

Gaps in the implementation of nZEB	• No holistic policy package in place at the moment. • There is no support scheme for the implementation of energy efficiency and renewable energy in new buildings, e.g. to stimulate the construction of only A class energy buildings or only with a certain energy performance (e.g. a better interest or a premium for buildings with primary energy consumption lower than 50kWh/ m2/yr).
What can be improved to achieve the implementation of nZEBs?	• Create financial/ fiscal instruments for energy efficiency and renewable energy in new buildings that are embedded in a holistic policy package and which should include regulatory and communication elements. • Where possible, extend and adapt existing support schemes also for new buildings. • Make energy efficiency measures affordable (remove barriers) by introducing support mechanisms such as soft loans and grants. • Facilitate the use of renewable technology (remove barriers). • Support local technology (financial support, knowledge transfer) or/and where necessary, facilitate the import of only very efficient materials and renewable technology from other (EU)countries.
Intermediate steps	Create an in-depth gap analysis to find out: • which EE measures and RE technologies to support • which barriers exist on the market • which type of instruments effectively help to overcome identified barriers • what level of support is needed • which auxiliary instruments are needed to make the financing work • how to overcome budget limitations for support programmes • what is the investors opinion (how do people understand EE and RES)

What is the strategy in your country on green skills education (What do the authorities plan to do on this subject?) (Strategy documnets etc.) (max 1 page)

Public policies supporting green employability and training at national, regional and local level

There are specific regulations regarding "green mentality" in different economical sectors, which have been adopted by the Bulgarian government, as part of its strategy for sustainable development and in coherence with the European policies. These are Environmental Protection Act, Waste Management Act, Water Act, Clean Ambient Air Act, Protected Areas Act, Medicinal Plants Act, Soils Act.

There are two national programmes that tackles development of environmental skills:

- "Renewal and protection of Bulgarian forest" - The program was launched in 2003 in the context of massive fires that destroyed substantial forestry massifs in the last years. The aim of the programme was twofold: it seeks to ensure placement for unemployed people, and in the same time to promote working skills and habits in especially with regard to environmental and sustainable skills so as to increase their future placement chances. In addition, it should be noted that Bulgaria has substantial problems with illegal logging. The programme was carried out on the basis of subsidized employment, with split financing between MLSP and NFA. The program provided green jobs for 1760 unemployed people. The programme encompassed employment opportunities for all areas of forestry, with trainings in following aspects:

  - ✓ cleaning of areas damaged by wildfires;
  - ✓ soil treatment and preparation after wildfires;
  - ✓ re-forestation;
  - ✓ support for natural resumption of impacted areas;
  - ✓ forestry protection;
  - ✓ activities in forest nurseries;
  - ✓ monitoring for wildfires;
  - ✓ monitoring for illegal logging and hunting, etc.

- "Green Jobs" - Since 2011 the Bulgarian governement has introduced incentives for employers who open green jobs and hire unemployed people. The subsidy includes the salary for 6 months for employers who hire unemployed on green jobs. 3.2 milion BGN have been included for green jobs in the national plan for coping with unemployment, which will secure 2100 new job places. The green jobs subsidized under the program are described as "jobs, related to production of goods and services, which support the environmental protection." Companies, working in the spheres of waste recycling, environmentally safe transport and all other economical activities which are considered beneficial for the environment, may apply for subsidizing.

The impact of these policies can be measured in the next years, but they emphasise the importance of green skills and green jobs in all economic sectors.

Vocational education and training in Bulgaria: qualification needs and identified barriers

Current state and tendencies

1. Образователна структура на населението на възраст 25 - 64 години[1]
Educational attainment of the population 25 - 64 years of age[1]

(Проценти)
(Per cent)

	2006	2007	2008	2009	2010	
Общо	**100**	**100**	**100**	**100**	**100**	**Total**
Основно и по-ниско образование (МСКО - 2 и по-ниско)	25.6	22.6	22.5	22.1	20.6	Basic and lower education (ISCED - 2 and lower)
Средно образование (МСКО - 3+4)	52.5	55.1	54.8	54.9	56.2	Upper secondary education (ISCED - 3+4)
Висше						Tertiary education
Колеж (МСКО - 5B)	4.5	4.3	4.0	3.8	3.7	Colleges (ISCED - 5B)
Университет (МСКО - 5A+6)	17.4	18.1	18.8	19.2	19.5	Universities (ISCED - 5A+6)

[1] Данните са средногодишни от Наблюдението на работната сила.

[1] Average annual data are based on the Labour Force Survey.

Employment per economic sectors in 2013

The number of people in employment has reduced in all economic sectors.

- Services - 59,9% of all people in employment.
- Manufacturing - 20,9%,
- Construction - 8,8%.
- Agriculture, primary sector and utilities - 10,4%, of whom:
    - o agriculture, forestry and fishing - 6,8%,
    - o primary sector - 1,1%,
    - o production and distribution of electric and heating energy and gas fuels - 1,4%
    - o supply of waters; sewerage services, waste management and reinstatement - 1,1%.

The National Action Plan on Employment in 2012 aims to:

- To increase the employability, incentives for the inactive participants and discouraged;
- To improve the quality of the labour force through qualitification, upskilling and better match to the needs of the labour market;
- Limit the unemployment in specific regions.

The Action Plan for implementation of the National LLL Strategy envisages different measures to improve skill needs identification. Implementation of projects under OP HRD works towards skills improvement at all levels through training of dropouts, continuing training and vocational training of young people, special training and retraining programs for young unemployed persons, development of lifelong learning programs, training for key competences.

Green skills in the education and training

In the curricula of compulsory school education there are several subjects which focus on green skills and environmental awareness and protection: Environment, Man and Nature; Biology; Chemistry and Environmental Protection.

Due to the growing interest in these subject by children and parents, even in the pre-school education various out of school initiatives or elective subjects– such as the bio gardens emerged on non-formal level or as and eco projects, funded by the Human Resource Development Operational Program. However, the concept of green skills as a part of all jobs in the 21st century is still not quite well understood as a whole.

In the VET system green skills are linked to specific subjects, but due to the out of date training of teachers and equipment, it is only theoretical and general.

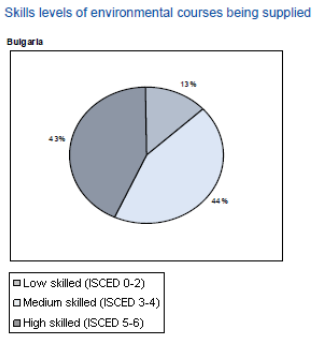
In university curricula there are general Bachelor and Master programs on Ecology and Environment protection, but also in many vocational fields such as Chemistry, Agriculture, Construction, Engineering, etc, there are programs addressing green skills and technologies.

In companies there is a growing number of trainings for employees in Waste Prevention, Waste Management, Recycling, Bioenergy, Energy Efficiency, Energy Recovery, Renewable energy.

In the last years there is a trend towards promoting environmental awareness on general level, not only in companies, but among population as a whole. Several large public campaigns have been conducted in which national media has taken very active part – Let's clean Bulgaria in one day, The nylon is out of fashion, etc.

Training that promotes environmental skills

Currently, green skills are developed in Bulgaria mainly in the two poles – managerial and low-skilled, as they are needed either in the high technological sectors or at a level that doesn't require specific skills (blue-collar jobs). But since the green skills are expect to become vital part of all jobs in the next years, there is a gap in the middle, which has to be filled. However, this requires efforts to create adequate training programs for the mainstream education.



source: Programmes to promote environmental skills, Ecorys, 2010

Opportunities and demands of the labour market regarding green jobs

The issue of availability of programmes and trainings that promote environmental skills essentially has been influenced by two trends: a historical and a structural one, with European integration playing an important role for the recent departure from well established patterns in both cases.

Historically, awareness for environmental issues in Bulgaria has not been very high and the country has suffered environmental degradation during the former regimes. There were hardly any regulations on the use of energy and natural resources. Cheap and dirty sources of energy were used and natural resources were overexploited, causing pollution. Therefore, an almost total lack of awareness and culture for environmentally friendly practices was in place. This already provides a difficult basis for mainstreaming or directly addressing environment in current professional training and skills initiatives.

Unlike countries such as Germany and The Netherlands that have strong eco-movements, it was only in the context of EU membership and adoption of the environmental acquis that Bulgaria had to face questions of regulation for environmental protection. Within this process, a certain increase in environmental awareness and support for related actions in the Bulgarian population could be observed. This also has to be seen in the context of continuous EU-emphasis on greening the economy. As a consequence, employers began to realize the benefits of adopting a CSR strategy and eco-friendly practices. Therefore, through increased general awareness for environment, demand for environmental skills is rising.

A recent survey16 carried out among employers showed that 66% of the respondent companies had appointed a dedicated employee to deal with environmental issues and 25% stated that their company has eco-policy and measures as a part of the CSR of the company. Nonetheless, the view that environmental initiatives are expensive and that Bulgarian companies due to the hardships of transition do not have the necessary resources - prevails.

Recent years have also seen a structural shift in the Bulgarian economy towards sectors such as **renewable energy sources** and **biological farming** that are currently benefiting from substantial funding through EU Cohesion Funds. Therefore, environmental skills connected to the establishment, management and exploitation connected with those areas, are on the rise. In the same time, traditional skills shortages, in particular ICT skills and languages, continue to be high on the priority agenda, together with more specific trainings that aim at skills upgrading in particular professions, for instance in the food production sector.

Typology trainings on environmental skills

National/ State level programmes - In the context of the current global recession, a National anti-crisis plan was released in 2009. It does not, however, include any foreseen measures targeted to the greening of the economy, also not in the context of measures for job retention such as subsidies for enterprises for trainings of employees. In addition, EA also concludes in its final annual report that throughout the whole year, none of the licensed centers has offered the programme “Technologies for environmental protection” that leads to the state recognized profession of “Ecologist”.

At the same time, basically all **NAVET-licensed professions include specific modules on environmental training**, which differ depending on the specific profession. The modules range from waste management or dealing with hazardous materials for professions in the construction sector, through energy effectiveness for the technical professions, to elements such as paper recycling for administrative professions. Yet it is unclear to what extent are such modules actually being implemented and elaborated through the training centers, as interview stakeholders indicated that often the module is carried out only "pro forma".

Furthermore, in connection with the implementation of the environmental acquis and the monitoring of investment programmes, there are several courses designed or open for municipality officials. The most comprehensive trainings are provided by the **Association of Municipal Ecologists (BAMEE)**. Since 2007, BAMEE has established a training centre for courses dealing with environmental issues. Apart from trainings connected to programming and monitoring of activities connected to environmental protection at municipal/ local level, BAMEE also offers trainings for environmental impact assessment techniques, on management of water, waste and air, courses on environmental awareness, on NATURA 2000, as well as on the whole environmental legislation in Bulgaria. Courses are open not only of public sector employees, but also for companies that are considering applying or have applied for funding under specific EU programmes.

Given the recent positive growth developments on the Bulgarian market for **biological farming**, several relevant courses have been offered. They focus on foundations of biological farming, agroecology, as well as on the EU funding requirements from EU structural and cohesion fund programmes. The completion of a course in agro ecology is a prerequisite for the application for EU funding.

The majority of programmes are offered as in-company trainings in different sectors.

Two programmes have recently been developed by Glavbolgarstroy, which is the biggest construction company at the Bulgarian market and also disposes of a large centre for vocational training. In addition, all contacted centers for vocational education training emphasized that with regard to the construction sector, ecology and environmental protection is an obligatory module in all offered professional trainings and is of particular importance.

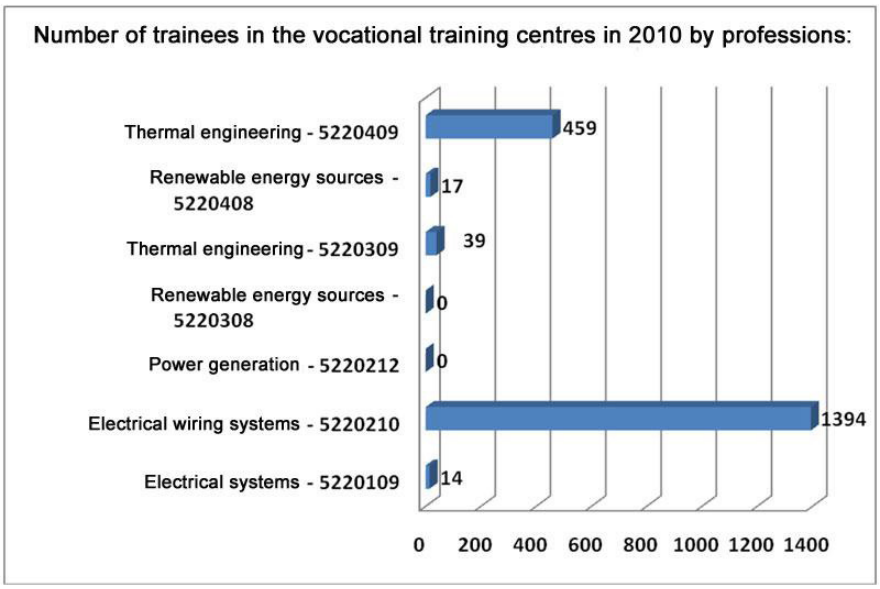
Lukoil, as the biggest fuel producer, disposes of a large training centre and has an established programme for developing and upgrading environmental skills of its workers.

An interesting example is Chelopech Mining, which is a daughter company of Dundee Precious. It conduct various in-house company trainings connected to environment, such as dealing with hazardous metals and materials, waste recycling, as well as energy management.

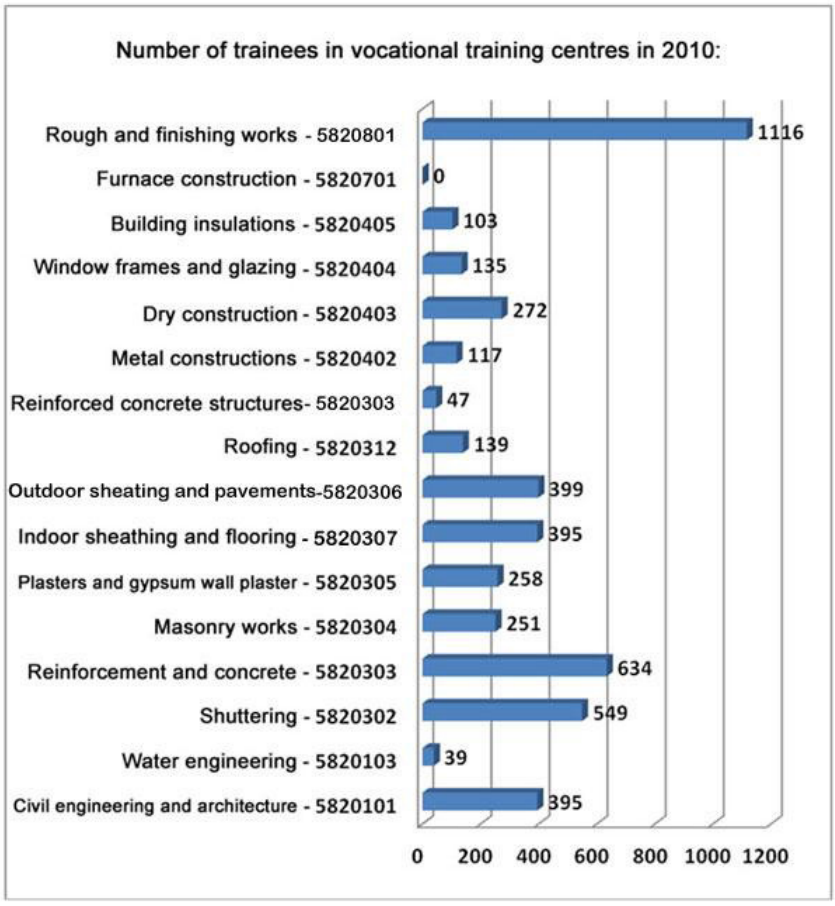
For most companies that are not directly engaged in the energy sector, in-company trainings focus on courses on energy effectiveness and awareness for environmental issues. Such topics are gaining more and more prominence in Bulgaria.

The topic of **renewable energy sources (RES)** is currently a focus of significant opportunities for EU funding. There are workshops offered for employees on a management level on renewable energy, covering the specifics of the legal framework, possibilities for establishment of wind, solar and geothermal energy plants, the possibilities for financing of such projects through EU structural funds, as well as public-private partnerships and subsidy possibilities.

Trainings on environmental skills in building and construction sector



Number of trainees in the vocational training centres, professional direction "Electrical engineering and energy sector".



Number of trainees in the vocational training centres, professional direction "Construction".

In 2012 NAVET and The Bulgarian Construction Chamber developed a Roadmap for Trainings to Develop Skills and Knowledge on Intelligent Energy Solutions in Buildings for Bulgaria until 2020. That document included a detailed list of all action that have to be performed till 2020 in order fulfill the 2020 stragedy for EE and to avoid the expected lack qualified workers in the sector.

Transnational mobility of professions in your country from other European countries. Your country's legislations, regulations. (max 1 page)

In general, since 90s in Bulgaria the transnational mobility of professions is from Bulgaria to western European countries or America. During the last 20 years about 2 milion Bulgarian emigrated.

However, for some new professions, or for positions with special requirements, or in companies that enter the Bulgarian market, foreign people come to work in Bulgaria.

There no restricrions for EU citizens to work in Bulgaria. The only administrative procedure is the obtain an ID number from the National Revenue Agency.

What are the most related occupations in your country on green skills. What kind of education is given to these trainees? Please fill the table.

Please add if you think more:

Name of The Occupation	ISCO-08	ISCO-08 Title
Environmental Engineer:	**2143**	**Environmental engineers**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Master degree; 5 years of university education/training
Info about the skill's link to green economy		Environmental engineers conduct research, consulting, design and directly implement solutions to prevent, control or reduce the harmful effects of human activities on the environment by applying knowledge of various engineering disciplines.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the new technological developments
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 7
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of the environmental engineers. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer)
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Energy auditor:	**2133**	**Environmental Protection Profesionnals**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Master degree; 5 years of university education/training
Info about the skill's link to green economy		Environmental Protection Profesionnals study and evaluate the environmental consequences of human activities such as pollution of air, water and soil, climate change, toxic waste, depletion and degradation of natural resources. They develop plans and seek solutions to protect, preserve, restore, minimize and prevent further environmental damage.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the new technological developments
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 7
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of the environmental engineers. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer)
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Transport vehicle emissions inspectors:	**3115**	**Mechanical Engineering Technicians**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Mechanical Engineering Technicians perform technical tasks related to the design, manufacture, assembly, construction, operation, maintenance and repair of machines, components and mechanical equipment.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the new technological developments
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 6
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of the environmental engineers. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Solar photo voltaic installers:	**7413**	**Electrical line installers and repairers**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum secondary vocational education (ISCED 3A) - 11 grade in secondary vocational or 8 grade in lower secondary school (ISCED 2) plus 2 years in specialised vocational school or vocational training center
Info about the skill's link to green economy		Electrical line installers and repairers install, repair and connect electrical cable networks for transmission and distribution of electricity and similar systems and equipment.
Is their training sufficient in your VET system (Quality of education)		The training is sufficient for a start-up position. Further training and upgrade of skills and knowledge is required for professional development.
Is the number of graduates enough or there is a lack of labour		In the period 2003-2008 there was a rapid growth in the construction sector in Bulgaria. In addition between 2007 and 2012 there was a rapid growth in the green energy sector. It was due to the EU directives and initiatives for reduction of carbon emissions and production of green energy and due to the national funding for construction and installation of RET (esp. PV and wind). These factors led to lack of electrical line installer and repairer specialists on the labour market for the period. However, financial and economic crisis stopped the growth in these sectors, so currently the number of graduates is sufficient.
Skills level (EQF)		EQF Level 4
Implementations on continuous training (Training of workers)		Every three years electrical line installers and repairers pass training courses to update and upgrade their knowledge and skills and to obtain upper professional degree.
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Electricians:	**7411**	**Building and related electricians**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum secondary vocational education (ISCED 3A) - 11 grade in secondary vocational or 8 grade in lower secondary school (ISCED 2) plus 2 years in specialised vocational school or vocational training center.
Info about the skill's link to green economy		Building and related electrician specialists install, maintain and repair electrical cable systems and related equipment.
Is their training sufficient in your VET system (Quality of education)		The training is sufficient for a start-up position. Further training and upgrade of skills and knowledge is required for professional development.
Is the number of graduates enough or there is a lack of labour		In the period 2003-2008 there was a rapid growth in the construction sector in Bulgaria. In addition between 2007 and 2012 there was a rapid growth in the green energy sector. It was due to the EU directives and initiatives for reduction of carbon emissions and production of green energy and due to the national funding for construction and installation of RET (esp. PV and wind). These factors led to lack of building and related electrician specialists on the labour market for the period. However, financial and economic crisis stopped the growth in these sectors, so currently the number of graduates is sufficient.
Skills level (EQF)		EQF Level 4
Implementations on continuous training (Training of workers)		Every two or three years building and related electrician specialists pass training courses to update and upgrade their knowledge and skills and to obtain upper professional degree.
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Insulation workers:	**7124**	**Insulation workers**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum 8 grade in lower secondary school (ISCED 2). Additional 2 years in specialised vocational school or vocational training center are needed for higher positions that require knowledge and skills for reading construction plans, schemes and specifications for determining the type, quality and quantity of the necessary insulating materials.
Info about the skill's link to green economy		Insulation workers make and repair insulating materials in buildings, boilers, pipes, refrigeration or air conditioning.
Is their training sufficient in your VET system (Quality of education)		The training is sufficient for a start-up position. Further training and upgrade of skills and knowledge is required for professional development.
Is the number of graduates enough or there is a lack of labour		In the period 2003-2008 there was a rapid growth in the construction sector in Bulgaria. In addition there are different national initiatives for renovation of old residential and public buildings. The financial and economic crisis stopped the growth in the construction sector, but the national initiatives for renovation an rehabilitation of old residental and public builgings are still active, so it can be mentioned that currently there is some lack of insulation workers.
Skills level (EQF)		EQF Level 4
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of the insulation workers. The continuous training is organised by the companies.
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Refuse collectors:	**9611**	**Garbage and recycling collectors**
Graduate Needed? And entry level qualifications to VET? How many years training?		There are no requirement for vocational training and education
Info about the skill's link to green economy		Garbage and recycling collectors collect and transport waste and garbage from buildings, yards, streets and other public places for processing and recycling. Knowledge about separate waste collection
Is their training sufficient in your VET system (Quality of education)		There are no requirement for vocational training and education
Is the number of graduates enough or there is a lack of labour		Yes
Skills level (EQF)		EQF Level 1
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of the garbage and recycling collectors. The continuous training is organised by the companies.
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Amenity Horticulturist/ Horticultural Consultant/ Arboriculturist	**6113**	**Gardeners, horticultural and nursery growers**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum 8 grade in lower secondary school (ISCED 2).
Info about the skill's link to green economy		Gardeners, horticultural and nursery growers plan, organize and carry out operations on growing and cultivation of trees, shrubs, flowers and other plants in parks and private gardens; produce saplings, bulbs, seeds and seedlings; grow vegetables and flowers by intensive cultivation techniques.
Is their training sufficient in your VET system (Quality of education)		Yes
Is the number of graduates enough or there is a lack of labour		Yes
Skills level (EQF)		EQF Level 2
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of the gardeners, horticultural and nursery growers. The continuous training is organised by the companies.
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Agricultural Consultant/ Agricultural Engineer	**3142**	**Agricultural technicians**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Agricultural technicians perform tests and experiments, and provide scientific and technical support of the agronomists, farmers and managers of agricultural holdings.

Is their training sufficient in your VET system (Quality of education)	Yes
Is the number of graduates enough or there is a lack of labour	Yes
Skills level (EQF)	EQF Level 6
Implementations on continuous training (Training of workers)	There are no legislative or regulatory requirements regulating the continuous training of the Agricultural technicians. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment	

Name of The Occupation	**ISCO-08**	**ISCO-08 Title**
Architect	**2161**	**Buildings Architect**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Master degree; 5 years of university education/training
Info about the skill's link to green economy		Architects design commercial, industrial, residential and non-residential buildings control their construction, maintenance and restoration.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the new legislative regulations and technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 7
Implementations on continuous training (Training of workers)		After finishing master degree the architects have the so called limited/restricted legal capacity. That means that they can validate/certify projects up to 200 m^2 gross floor area. After they have worked 3 years in an architectural company and have participated in the design of at least 3 projects they can become a member of the Chamber of Architects in Bulgaria and can get the so called full legal capacity. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment		

Name of The Occupation	**ISCO-08**	**ISCO-08 Title**
Architectural Technician	**216**	**Architects, planners, surveyors and designers**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Master degree; 5 years of university education/training
Info about the skill's link to green economy		Architects, planners, surveyors and designers plan and design landscapes, exterior and interior decoration of buildings, design of industrial products, visual and audio-visual content for the transmission of information. They perform research activities for the exact positioning of geographical features and design, prepare and revise maps, and establish and implement plans and policies for the control of land use.

Is their training sufficient in your VET system (Quality of education)	Yes, but continuous training is needed to upgrade their knowledge and skills according to the new legislative regulations and technological developments.
Is the number of graduates enough or there is a lack of labour	According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)	EQF Level 7
Implementations on continuous training (Training of workers)	After finishing master degree they have the so called limited/restricted legal capacity. That means that they can validate/certify projects up to 200 m^2 gross floor area. After they have worked 3 years in an specialised company and have participated in the design of at least 3 projects they can become a member of the Chamber of Architects, Chamber of Engineers or other relevant chamber and can get the so called full legal capacity. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment	

Name of The Occupation	**ISCO-08**	**ISCO-08 Title**
Biomedical Engineer	**2149**	**Engineering professional not elsewhere categorised**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Master degree; 5 years of university education/training
Info about the skill's link to green economy		Here are classified specialists who conduct research, consult or develop technical procedures and solutions concerning workplace safety, biomedical engineering, optics, materials, nuclear power generation and explosives.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the new legislative regulations and technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 7
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of these professionals. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment		

Name of The Occupation	**ISCO-08**	**ISCO-08 Title**
Community Development Worker/ Community Education Officer	**3412**	**Social work associate professionals**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Social work associate professionals administrate and apply social programs and support people to deal with personal and social problems.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the new legislative regulations and technological developments.

Is the number of graduates enough or there is a lack of labour	According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)	EQF Level 6
Implementations on continuous training (Training of workers)	There are no legislative or regulatory requirements regulating the continuous training of these professionals. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment	

Name of The Occupation	**ISCO-08**	**ISCO-08 Title**
Conservation Officer, historic buildings, nature, museum/gallery	**3433**	**Gallery, Museum and Library Technicians**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Gallery, Museum and Library Technicians prepare artwork, exhibits and artifacts collection, arrangement and construction of gallery exhibitions, helps librarians in the organization and operation of systems for storing recorded material and files.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 6
Implementations on continuous training (Training of workers)		The continuous training is organised by the companies.
Any comment		

Name of The Occupation	**ISCO-08**	**ISCO-08 Title**
Ecologist	**2133**	**Environmental Protection Professionals**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Environmental Protection Professionals Specialists in environmental study and evaluate the environmental consequences of human activities such as pollution of air, water and soil, climate change, toxic waste, depletion and degradation of natural resources. They develop plans and seek solutions to protect, preserve, restore, minimize and prevent further environmental damage.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 6
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of these professionals. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).

Any comment	

Name of The Occupation	ISCO-08	ISCO-08 Title
Energy Engineer	**215**	**Electrotechnology Engineers**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Master degree; 5 years of university education/training
Info about the skill's link to green economy		Electro technology engineers conduct research, design, consult, plan and manage the construction and operation of electronic, electrical and telecommunications systems, components, engines and equipment. They organize and establish control systems that monitor the performance and safety of electrical and electronic devices and systems.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 7
Implementations on continuous training (Training of workers)		After finishing master degree they have the so called limited/restricted legal capacity. That means that they can validate/certify projects up to 200 m^2 gross floor area. After they have worked 3 years in an specialised company and have participated in the design of at least 3 projects they can become a member of the Chamber of Architects, Chamber of Engineers or other relevant chamber and can get the so called full legal capacity. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Environmental Consultant/ Environmental Education Officer	**2133**	**Environmental Protection Professionals**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Environmental Protection Professionals Specialists in environmental study and evaluate the environmental consequences of human activities such as pollution of air, water and soil, climate change, toxic waste, depletion and degradation of natural resources. They develop plans and seek solutions to protect, preserve, restore, minimize and prevent further environmental damage.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 6
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of these professionals. The continuous training is organised by the companies or the specialists themselves, depending

	on their working status (labour contract or free lancer).
Any comment	

Name of The Occupation	ISCO-08	ISCO-08 Title
Farm Manager	**131**	**Production Managers in Agriculture, Forestry and Fisheries**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Production Managers in Agriculture, Forestry and Fisheries plan, manage and coordinate various activities in large (with a hierarchical management structure) agricultural, forestry and fisheries for cultivation and extraction of plant production, breeding and rearing of animals, fish and shellfish, as well as fishing.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 6
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of these professionals. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Forest/Woodland Manager/ Nature Conservation Officer	**1311**	**Agricultural and Forestry Production Managers**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Agricultural and Forestry Production Managers plan, manage and coordinate various activities in large (with a hierarchical management structure) agricultural and forestry farms for cultivation of plant production, breeding and rearing animals.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 6
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of these professionals. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Government Social Research Officer	**2422**	**Policy Administration Professionals**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Policy Administration Professionals develop and analyze policies leading to planning, implementation and transformation of government and commercial activities and programs.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to upgrade their knowledge and skills according to the technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 6
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of these professionals. The continuous training is organised by the companies or organizations.
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Heritage Manager	**262**	**Librarians, Archivists, Curators**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Librarians, Archivists, Curators arrange and maintain archives, libraries, museums, art galleries and etc...
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to update and upgrade their knowledge and skills according to the technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)		EQF Level 6
Implementations on continuous training (Training of workers)		There are no legislative or regulatory requirements regulating the continuous training of these professionals. The continuous training is organised by the companies or organizations.
Any comment		

Name of The Occupation	ISCO-08	ISCO-08 Title
Landscape Architect	**2162**	**Landscape Architects**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Master degree; 5 years of university education/training
Info about the skill's link to green economy		Landscape architects plan and design landscapes and free areas around residential, public, industrial and commercial buildings near roads, sports grounds. They plan and monitor their construction, maintenance, management and recovery.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to update and upgrade their knowledge and skills according to the technological developments.
Is the number of graduates enough or there is a lack of labour		According to the current situation of the labour market the number of graduates is sufficient

Skills level (EQF)	EQF Level 7
Implementations on continuous training (Training of workers)	After finishing master degree they have the so called limited/restricted legal capacity. That means that they can validate/certify projects up to 200 m^2 gross floor area. After they have worked 3 years in an specialised company and have participated in the design of at least 3 projects they can become a member of the Chamber of Architects, Chamber of Engineers or other relevant chamber and can get the so called full legal capacity. The continuous training is organised by the companies or the specialists themselves, depending on their working status (labour contract or free lancer).
Any comment	

Name of The Occupation	**ISCO-08**	**ISCO-08 Title**
Teacher, primary school, secondary school, adult education, vocational school	**23**	**Teaching Professionals**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Master degree - 5 years of university education/training or Bachelor degree - 4 years of university education/training plus pedagogical course
Info about the skill's link to green economy		Teaching Professionals teach the theory and practice of one or more subjects at different educational levels, conduct research, improve or develop concepts, theories and practical methods in individual disciplines, prepare textbooks.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to update and upgrade their knowledge and skills according to the new legislation and technological developments.
Is the number of graduates enough or there is a lack of labour		There is always lack for good teaching professionals
Skills level (EQF)		EQF Level 6 or Level 7
Implementations on continuous training (Training of workers)		There are some legislative or regulatory requirements regulating the continuous training of teaching professionals, but the schools or the training institutions has freedom in organising of attestation and continuous training of its staff.
Any comment		

Name of The Occupation	**ISCO-08**	**ISCO-08 Title**
Social Worker/Youth Worker/ Volunteer Coordinator	**2635**	**Social Work and Counselling Professionals**
Graduate Needed? And entry level qualifications to VET? How many years training?		Minimum University Bachelor degree; 4 years of university education/training
Info about the skill's link to green economy		Social Work and Counselling Professionals provide advice and guidance to individuals, families, groups, communities and organizations on social and personal problems. They help clients to develop skills, gain access to resources and support services needed to deal with problems such as unemployment, poverty, disability, addiction, criminal behavior or family problems.
Is their training sufficient in your VET system (Quality of education)		Yes, but continuous training is needed to update and upgrade their knowledge and skills according to the new legislation and technological developments.

Is the number of graduates enough or there is a lack of labour	According to the current situation of the labour market the number of graduates is sufficient
Skills level (EQF)	EQF Level 6
Implementations on continuous training (Training of workers)	There are no legislative or regulatory requirements regulating the continuous training of these professionals. The continuous training is organised by the companies or organizations.
Any comment	