



Questions for each country in the Expect project:

The national context for VET and sustainability education

1. Is there a common core curriculum for all students 16-18 in your country?

Yes: Italy, Spain.

No: Netherlands, Latvia, Austria, Finland, UK.

Netherlands:

No, there is not, except that the languages Dutch and English are always mandatory, but on different levels, depending on the school type.

We do have a national qualification structure for students in the VET. All VET students in the Netherlands work on the same learning outcomes linked to the job they are learning for. We have appr. 60 VET colleges. Each college is free to organise the lessons, the didactical approach fitting the target audience.

Italy:

In Italy students at the age of 14, may choose what level of school to attend.

There are 3 types of secondary school: they range from Academic to the Vocational.

- Liceo (Lyceum) preparing students for University.
- Istituto Tecnico (Technical College) it is the most common choice and leads to a University-entrance-qualification.
- Istituto Professionale (Vocational college) which includes practical work, related to a specific industry and/or trade.

Programs of study are generally introduced at National level. Currently most secondary schools provide some common structure and core subjects, such as: Italian Literature and language, History, Geography, Philosophy, Math, Physics, Biology, Chemistry, 1/2 Foreign Languages and Physical Education. These subjects are studied during the first 2 years and augmented by subjects of specific sectors in the following years.

Latvia:

In Latvia, General upper-secondary education can be completed at upper-secondary school or grammar school. Vocational education can be obtained at vocational secondary schools or technical colleges. Education is free of charge.

In vocational education, pupils can choose to follow vocational training programmes or vocational secondary education programmes and obtain a vocational qualification.

Vocational education programmes last 3-4 years after primary education.

The content of vocational education is defined by the Vocational Education Act. The basic documents governing the content of vocational education are:

- the national standard for vocational education;
- the occupational standard and the professional qualification requirements contained therein;
- the structure of qualifications in the sector;
- the vocational education and training curriculum.

A vocational education and training programme is developed by an educational institution in accordance with the national education standards, which, according to the level and type of education, define the main aims and objectives of education programmes, the compulsory core content of education, the basic criteria and general procedures for assessing the education acquired, and the requirements for professional qualifications included in the occupational standard, which define the duties and tasks of professional activity and the general and professional competence required for their fulfilment.

Austria:

No, there is no core Curriculum for all students 16-18 but German is mandatory for all students in Austria, the first foreign language is also mandatory but it doesn't have to be English. Educational affairs are traditionally a federal task and are predominantly handled by the Ministry of Education. However, primary and lower secondary education is a provincial matter, which means that federal schools and provincial schools have different service laws. In 2021/2022, 144 VET schools existed in Austria. The average length of an apprenticeship is 3 years. The vocational school in Austria consists of a variety of organisational forms, which is carried out in coordination between the economy and those responsible for the school. The needs of the individual sectors or regions as well as the number of apprentices are taken into account. There are currently around 200 recognised apprenticeships. The content of teaching curricula is determined by the Federal Ministry of Education, Science and Research for each teaching profession.

Finland:

No, there is not. In Finland the basics of professional degrees guide the organization of education and the planning and implementation of students' personal study paths. The

Board of Education decides on the basis of the degree. The bases are prepared in cooperation with working and business life, education organizers and other stakeholders.

Vocational degrees include vocational basic degrees, professional degrees and specialized professional degrees. Currently, the degree structure of vocational degrees includes 43 vocational basic degrees. Within the basic degree, the student can focus on a specific field of expertise. The scope of professional basic degrees is 180 competence points and the degrees are made up of parts of the degree.

Vocational basic degrees include common parts of the degree. They strengthen the basic skills needed at work and in life, as well as readiness for further studies and lifelong learning. The scope of the common parts of the degree is 35 competence points.

In the common parts of the degree, the promotion of sustainable development is mandatory for all, which includes: Principles of sustainable development, Carbon neutrality and circular economy and ethical aspects of the operation.

UK:

No. The National Curriculum applies from age 5 to age 16 and 16-18 study programmes are very diverse and narrow in terms of content. The broadest general education programmes tend to cover only 3 academic subjects and vocational and technical programmes are very specialised. There is an expectation that colleges and schools should promote the personal development of students, but this is not expressed in terms of a common curriculum.

Spain:

In Spain, the education system is managed by each of the 17 autonomous regions, and they have the authority to establish their own education policies and curricula. Therefore, there is no common core curriculum for all students aged 16-18 in Spain. However, there are some national guidelines and recommendations for upper-secondary education (Bachillerato) that all regions are expected to follow. The Spanish Ministry of Education and Vocational Training sets the general framework for Bachillerato, which includes the required subjects and the number of hours each subject should be taught. These subjects include Spanish Language and Literature, Foreign Language, Philosophy, History, Mathematics, and Sciences, among others. In addition, the autonomous regions have the flexibility to add their own subjects, and they may also have their own requirements for completion of Bachillerato. For example, some regions may require students to take certain regional language or culture courses, or to complete a community service project.

2. What is the current position of your country in terms of Carbon emissions, renewables, energy efficiency and meeting net zero targets?

Renewable share: Spain: 44%, Latvia: 41%, UK: 40%, Austria: 36%, Italy: 18%, Netherlands: 14%, Finland: ?

Netherlands:

Reduction of Carbon emissions: The EU targets were a reduction of 20% in 2020 and 40% in 2030. NL already reached a reduction of 30% in 2020, but fell back to 28% in 2021.

Renewable energy: Only 6% of the energy consumption was from renewable energy sources in 2016. It was the target to raise this to 10% in 2020.

NL did however better and achieved 14% in 2020, but fell back to 12,3% in 2021.

The annual consumption of energy is since many years between 3000 and 3500 Petajoule. Only in 2020 it was slightly less.

Although not all statistics are very positive, in general NL is on track regarding their national targets, which was not the case in 2020.

Italy:

Italy generates 11,4% of the EU total greenhouse gas emission and has reduced emissions at a faster pace than EU average since 2005.

Under EU efforts-sharing legislation Italy reduced its emissions by 13,2% by 2020 relative to 2005 and the country expects to reach the 2030 target of 33%. Italy achieved an 18% share of renewable energy sources (RES) in 2019.

The country 2030 target of a 30% share is focused mainly on wind and solar power. Italy expects to triple the production of solar energy and double its production of energy from wind by 2030.

The phasing out of coal into electricity production will be a main driver behind this development with a projection of 55% of final electricity consumption to come from RES by 2030.

The European Commission has evaluated Italy's 2030 ambition to be sufficient as regards both primary and final consumption of energy. Italy is working for zero CO₂ in 2050.

Latvia:

According to Latvia's national energy and climate plans (NECPs) submitted in 2019, more than half (56 %) of Latvians expect national governments to tackle climate change.

Latvia accounts for 0.3 % of total EU greenhouse gas (GHG) emissions and its emissions increased between 2005 and 2019, in contrast to the average EU trend. The carbon intensity of Latvia's economy is higher than the EU average, but has declined since 2005. Emissions from the transport sector increased by 6.9 % between 2005 and 2019,

accounting for 27.8 % of total emissions. The manufacturing industries and construction sector showed the biggest percentage reduction (42 %) in emissions over the period. Under EU effort-sharing legislation, Latvia was allowed to increase its emissions by 17 % by 2020, compared with 2005, and in 2019 was on track to achieving the target.

Latvia increased its share of renewable energy in total energy consumption by 8.7 percentage points to 41 % during the 2005-2019 period, aiming to achieve a 50 % share by 2030. In its assessment of the NECP, the Commission finds the Latvian 2030 target to be adequate. Nevertheless, it warns that the target might be missed if the pace of deployment of renewables is not maintained.

Austria:

National greenhouse gas emissions are generally at a high level in Austria, however, show a decreasing trend from 84.1 million t CO₂-equiv. in 2010 to 77.1 million t (2021, provisional value). The share of renewable energies in Austria increased from 31.2% in 2010 to 36.4% in 2021. In 2019, Austria's final energy consumption (excluding international air transport) amounted to 1,151.8 PJ – a 19.1% increase compared to 2000. The main drivers for the increase were a rise in final energy consumption in the transport sector (+38.1%) and consumption in the industry sector (+14%) over this period. Final consumption also rose in the residential sector (+4.6%). Although Austria already has a high share of zero emissions electricity generation, there is still scope for more solar and wind power. The national average shares of solar and wind are far below the 2030 benchmarks. Austria is aiming to reach carbon neutrality by 2040. Under EU effort-sharing legislation, Austria was required to reduce non-ETS emissions by 16% before end 2020, compared with 2005, and must achieve a 36 % reduction by 2030; this outcome currently seems unlikely. According to Greenpeace Austria, Austria will only reach the legally binding EU reduction target on greenhouse gases in 2050, i.e. with a 20-year delay. In 2030, around 42 million tonnes of greenhouse gases are still expected to be emitted outside of emissions trading. This is about 12 million tonnes more than the EU target for Austria (-48 percent compared to 2005).

Finland:

In accordance with the goals of the energy and climate strategy and the government program, the aim is to increase the use of renewable energy from the current level. The goal is for renewable energy to account for at least 51 percent of final consumption in 2030.

The national energy and climate strategy, which was updated in 2016, outlines actions and goals by which Finland will achieve the energy and climate goals agreed in the government program and in the EU by 2030. As a concrete measure, the state administration will give up oil heating in its premises by 2025, and all public operators are encouraged to do the same. In addition, as part of the implementation of the energy

and climate strategy, the use of coal as a fuel for electricity or heat production is prohibited from May 1, 2029, with some exceptions.

The means of reducing greenhouse gas emissions in the non-emissions trading sector (transportation, agriculture, heating and waste management) are recorded in the medium-term climate. The goal is for Finland to be carbon neutral by 2035 and the first fossil-free welfare society in the world. A third of the energy is renewable

In the use of renewable energy, Finland belongs to the top group of EU countries together with Sweden, Latvia and Austria. The focus of renewable energy in Finland is clearly on wood and bio-derived recycled fuels. A significant part of renewable energy production in Sweden and Austria is hydropower.

The EU's targets for renewable energy are defined in relation to the final energy consumption. Calculated in this way, the share in Finland has been about 3–5 percentage points higher than the share calculated from the total energy consumption. In 2019, the share of renewable energy sources in the total energy consumption was 37 percent.

UK:

The UK has pledged to reduce its greenhouse-gas emissions to net zero by 2050. The UK electricity sector has been rapidly decarbonising and consistent and coherent policy has supported renewables deployment and driven coal out of the electricity mix. Power sector emissions fell by 63% between 2011–2021 (BEIS 2022d). Coal provided only 2% of electricity generation in 2021, down from 40% a decade ago (BEIS 2022c). Meanwhile generation from zero carbon sources (renewables and nuclear) reached 55% in 2021, with 40% of this coming from renewables.

Currently, less than 40% of the UK's required emissions reductions are supported by proven policies and sufficient funding and in July 2022, the High Court ruled that the government's net zero strategy failed to outline policies that would enable it to meet the target. As a result the government has published a new plan 'Powering up Britain'.

Spain:

Spain is committed to reducing its carbon emissions and transitioning to a more sustainable energy system. Here is an overview of the current position of Spain in terms of carbon emissions, renewables, energy efficiency, and meeting net-zero targets:

Carbon Emissions:

According to data from the Global Carbon Project, Spain's carbon emissions have decreased steadily in recent years, falling from around 344 million metric tons of CO₂ in 2007 to around 260 million metric tons in 2020. However, Spain remains one of the largest emitters of greenhouse gases in the European Union.

Renewables:

Spain has made significant progress in developing its renewable energy sector, particularly in wind and solar power. According to the International Renewable Energy Agency (IRENA), Spain is one of the leading countries in the world in terms of installed solar capacity and was the second-largest market for wind power installations in Europe in 2020. In 2021, renewables accounted for approximately 44% of Spain's electricity generation.

Energy Efficiency:

Spain has implemented a range of policies and initiatives aimed at improving energy efficiency, including building codes and standards, energy labeling schemes, and subsidies for energy-efficient appliances and equipment. According to the International Energy Agency (IEA), Spain's primary energy intensity (a measure of energy efficiency) improved by around 1.6% per year between 2010 and 2018.

Net Zero Targets:

Spain has set ambitious targets for reducing its greenhouse gas emissions and achieving net-zero emissions by 2050. In December 2020, the Spanish government passed a Climate Change and Energy Transition Law that establishes the legal framework for achieving these goals. The law includes a target of reducing emissions by at least 23% by 2030 compared to 1990 levels and sets out specific measures and policies to help achieve this target.

In summary, while Spain still faces significant challenges in reducing its carbon emissions and meeting its net-zero targets, it has made significant progress in developing its renewable energy sector and improving energy efficiency. The country's commitment to decarbonization is reflected in its ambitious climate targets and policies, which aim to accelerate the transition to a more sustainable energy system.

3. Is there a national commitment in your country to education for sustainability including education about climate change - pre-16 and post-16?

Yes: Italy, Latvia, Austria, UK, Finland, Spain

No: Netherlands

Netherlands:

In primary education there is attention paid to Sustainability, but in secondary education, VET and higher education it is very diverse and depending per school. Social partners and VET providers in some sectors (e.g building and construction) have agreed about integration of sustainability and energy transition in the qualification files. In VET commitments are made in the sectors of trade & Industry, not as general national commitments.

Italy:

The introduction of Civic Education as a curricular discipline may be considered an important national commitment, a best practice because Italy, in order to foster social, economic and environmental sustainability and more specifically Climate and Sustainable education has not only adopted a new legislative framework but has also supported measures such as the introduction in the curricula pre-16 and post-16 of the compulsory discipline of Civic Education and the launch of a specific support plan called Regeneration Plan to help schools in implementing Education for Sustainable Development.

Latvia:

Latvia's Sustainable Development Strategies set priorities in line with the UN Sustainable Development Goals, and Latvia's National Development Plan 2021-2027 sets out national action on sustainability and climate change. Education content on sustainability, green issues and climate change is integrated into primary and secondary education.

In primary school (grade 1 to 6) kids are generally taught on the environment and sustainability. This subject is called "Environmental science", which includes topics related to health, climate, nature, energy, sustainability, renewables, etc. At the end of 6th grade, when students are approx. 12 years old, they have a test in this subject.

In high school (grade 10 to 12) "Environmental science" is taught to students that learn in general and humanity class. For students in biology/ mathematics, topics like chemistry, physics, biology, geography are taught separately and there is no subject as "Environmental science".

In vocational training and education institutions, each student regardless of their profession they learn, must learn the same "Environmental science" study course that is taught in high school.

Austria:

Yes, there is a national commitment in Austria for Education for Sustainable Development (ESD). The present Austrian Strategy for Education for Sustainable Development was developed by several ministries in 2008. It contains 6 learning fields. Additional initiatives are quality management support, exchange of good practices, integration of ESD in the design of curricula, education, training of teachers, and support programmes for initiatives, project and teaching materials. In the 137 pages paper, there is only one short passage on the subject of VET. The strategy is NOT mandatory. For the further implementation of ESD in Austria, a "Basic Decree on Environmental Education for Sustainable Development" for all Austrian school levels and school types was issued by the Ministry of Education in 2014. It defines objectives of environmental education, competences to be taught, environmental principles for schools or thematic approaches. The big "but" is, that this decree is also NOT mandatory. So environmental teaching is still depending on motivated teachers who are

willing to sacrifice their spare time and energy for fostering environmental teaching and environmental activities.

- Gender mainstreaming, health promotion, environmental protection, rural development, peace and human security, sustainable consumption, cultural diversity, and sustainable urban development.
- “For VET, the integration of sustainable perspectives is a particular challenge. Dual VET in particular offers an ideal learning environment for this: learners are confronted with company requirements and have to reconcile these with school learning objectives. Thus, environmental aspects or social concerns clash with economic interests. The necessary negotiation processes are important learning experiences in the sense of this strategy.”

Finland:

As part of education promoting sustainable development, environmental education should also be strengthened throughout in the education system starting from early childhood education. In addition, support should be given to those promoting sustainable development the implementation of curriculum entries related to training so that teaching is given as equally as possible across Finland.

Likewise, the understanding that the economy depends on functioning ecosystems. The concept of ecosocial civilization is used as a tool. In addition, the knowledge and skills of natural diversity, the built environment, must be strengthened on the relationships between the environment and climate change. The sustainable development and green transition development program that has started (2022-2023) confirms transition of vocational education towards carbon neutrality and a sustainable future. The goal is to prepare the sustainability road map of vocational education, which frames local goals and measures definition.

UK:

The Department for Education has a strategy for sustainability and climate change which acknowledges that education plays a vital role in helping to tackle climate change and creating a better, greener world for future generations. The aim is to improve the sustainability of the environment in and around education settings and the knowledge and understanding of children and young people (Action area 1. Climate Education) as well as promoting Green Skills (Action area 2. Green Skills and Careers). These issues are addressed in some qualification specifications, eg: science, geography and some vocational programmes but is not an explicit national requirement.

The government is also developing a Climate Leaders Award to celebrate and recognise education providers, children and young people for developing their connection with nature or making a real contribution to establishing a sustainable future for us all.

Spain:

Yes, there is a national commitment in Spain to education for sustainability, including education about climate change, both before and after age 16. The Spanish education system recognizes the importance of educating young people about sustainability and climate change as a key component of preparing them for the future.

At the primary and secondary levels, sustainability and climate change are included in the curriculum across a range of subjects, including science, social studies, and environmental education. For example, in science classes, students learn about the causes and effects of climate change, as well as the impact of human activities on the environment. In social studies classes, students learn about the social, economic, and political dimensions of sustainability and the importance of global cooperation to address environmental issues.

At the post-16 level, the Spanish Ministry of Education and Vocational Training has established a number of initiatives aimed at promoting sustainability and climate education. For example, the Ministry has developed a series of resources and teaching materials on sustainability and climate change for use in higher education. It has also established a network of university chairs on sustainability, which are dedicated to promoting research, education, and outreach on environmental issues.

In addition, there are numerous non-governmental organizations and community groups in Spain that are dedicated to promoting education for sustainability and climate education, both within schools and in the broader community. These groups work to raise awareness about environmental issues, provide educational resources and training, and promote sustainable practices in schools and other settings.

Overall, there is a strong national commitment in Spain to education for sustainability and climate education at all levels of education, from primary through higher education. This reflects the recognition that sustainability and climate change are among the most pressing challenges facing society today, and that education has a key role to play in preparing young people to address these challenges.

4. How is this commitment expressed? Within a general curriculum statement or within individual course requirements? Is sustainability education reflected in both the knowledge and the transversal skills which are taught?

Netherlands:

No general curriculum, but a large diversity of programs. In VET there are optional programs that can be chosen and it is agreed to pay attention to the integration of sustainability in professional qualification files. All VET-programmes are supposed to pay attention to the issue.

Italy:

The Italian Government have decided to integrate the curricula of any type of school and grade with a new subject area: Civic Education: as a matter of fact, ministerial

decrees establish that, starting from Pre-school kids are gradually introduced to the education to citizenship and personal responsibility.

Civic Education will be divided into three main concepts: Constitution, Sustainable Education and digital Citizenship.

Studying the Italian Constitution means students will approach to the foundation of our freedom, rights and duties. They will have the opportunity to discuss in every discipline fundamental theme such as health education, environment, safeguards, respect towards animals and common goods.

This is in line with the article 9 and 41 of our Constitution which has recognized as primary value the protection of environment and biodiversity, considered at the same level of public Health.

By digital citizenship students will develop their digital skills and become aware of the strength of virtual communication.

The approach is cross-curricular and permits to deal with the issues of Sustainable education from the perspective of different disciplines which contribute to form responsible citizens.

When the age of students allows a more technical approach the focus is shifted towards the development of more specific skills and competences.

Latvia:

At primary education level, pupils acquire knowledge in the field of science, including the preservation of environmental quality and the sustainable use of natural resources, in line with national education standards.

At secondary level, pupils continue to acquire knowledge in the area of science teaching, in line with national standards, on the above topics.

All students in Latvian VET institutions must learn "Environmental science" study course. It is stated in each profession standard as a module "Green skills". It is also applicable for primary schools and high schools. Additionally, environmental science is mentioned as one of a main things that should be taught in schools, in Latvian Education development guidelines.

Austria:

The Basic Decree on Environmental Education for Sustainable Development applies to all school levels of all types of schools. The contents and objectives of the basic decree are to be implemented in the initial, further and continuing training of the teacher training colleges, the educational institutions for elementary education and the educational institutions for social pedagogy. It is also addressed as a recommendation to all other institutions where teachers receive initial or in-service training. This means that ESD is so far only officially implemented in the teacher training but not in the Austrian curricula. An education reform from 2017 that expanded school autonomy can be used, for example, for setting priorities in terms of sustainability and for corresponding training measures. The basic competences that students should be taught are:

- Students should be able to build up sustainable knowledge, reflect on it and pass it on,
- students should develop sustainable attitudes,
- students should be able to assess the impact of their actions at school, local, regional and global levels, and make responsible decisions about consumption.

Classical topics that promote an understanding of ecosystems (water, soil, air, climate, energy, forest, ...) should be complemented by topics that increasingly include social and economic issues (consumption and lifestyle, sustainable resource use and equity, ecological footprint, renewable energies, environment and health, mobility, animal welfare, food production, genetic engineering and biotechnology, etc.). The organisation Teachers for Future says that in the draft of new curricula for primary/middle schools and lower secondary schools the environment, nature, climate and sustainability will be given more weight. As an "overarching theme", environmental education (like other previous teaching principles) is now additionally mentioned in the respective subject curricula.

- <https://science.apa.at/power-search/8004176324254929348>

Finland:

Sustainable Development is in the curricula at all school levels.

UK:

The national commitment is not necessarily reflected in the specification for all qualifications offered to 16-18 year olds. Many colleges are doing excellent work to embed sustainability and climate awareness into their programmes and the Association of Colleges (AoC) has developed a Road Map which helps colleges to plan their progress towards sustainability objectives.

Spain:

The commitment to education for sustainability and climate education in Spain is expressed through a combination of general curriculum statements and individual course requirements.

At the national level, the Spanish education system has established a set of core competencies that are considered essential for all students to develop during their education. These competencies include knowledge, skills, and attitudes related to sustainability and environmental awareness. Specifically, one of the competencies is "Social and Civic Competence," which includes the ability to understand and address social and environmental issues, including sustainable development and climate change.

In addition to these general statements, sustainability education is also reflected in individual course requirements across a range of subjects, including science, social studies, and environmental education. For example, in science classes, students learn about the causes and effects of climate change, as well as the impact of human activities on the environment. In social studies classes, students learn about the social,

economic, and political dimensions of sustainability and the importance of global cooperation to address environmental issues.

Importantly, sustainability education in Spain is not just limited to the acquisition of knowledge, but also includes the development of transversal skills. These are skills that cut across different subjects and are considered essential for success in the 21st century, such as critical thinking, problem-solving, communication, and collaboration. Sustainability education is seen as an opportunity to develop these skills in a meaningful context and to encourage students to become active and engaged citizens who can contribute to building a more sustainable and just society.

5. Is this commitment implemented differently in general education and vocational / technical education? Approximately how many hours per year does this involve?

Netherlands:

No general guidelines It is integrated in the programme or you can choose for an optional program. The time depends on the level:

- Level 1: 240 hours
- Level 2: 480 hours
- Level 3: 720 hours
- Level 4: 960 hours

Italy:

The commitment is the same in every type of school and at every level. The minimum amount of hours per year is 33.

Latvia:

For each education type there is a number of hours that should be dedicated to these lessons.

In primary school:

- 1st grade – 61 hours
- 2nd grade – 63 hours
- 3rd grade – 67 hours
- 4th grade – 63 hours
- 5th grade – 65 hours
- 6th grade – 67 hours

In secondary education (3 years of learning) and vocation training and education (4 years of learning) institutions, "Environmental science" should be taught approx. 315 hours.

Austria:

Yes, the commitment of teaching ESD is implemented differently in the diverse Austrian types of schools. Sustainability is not mentioned a lot in the elementary school curriculum but is regularly found in the curriculum of Austrian secondary schools. The topic is taught primarily in the subjects of geography and economics as well as biology and environmental studies. In the secondary schools curricula, the topic of sustainability plays a role in the educational area of "People and Society", "Geography and Economics", "Biology and Environmental Studies", "History and Social Studies/Civic Education" as well as "Nature and Technology". If one compares the topic of ESD in the different types of schools, one can see that in VET schools and VET colleges topics and aspects are taught in many different subjects. It was not possible to define the approximate hours dedicated to ESD per year.

Finland:

In Finland, early childhood education and general education teaching is based on the early childhood education plan and the basics of the pre-primary and primary education curriculum and the upper secondary school curriculum. A sustainable development path is described in the national guidelines, which takes into account the learner's age and conditions. The scope of studies are 40-150h/y.

Vocational education is based on the competence needs of working life and strong cooperation with working life. Gradually, the importance of sustainable development has been emphasized, and when renewing the criteria, it is taken into account even more comprehensively. Each degree includes knowledge of sustainable development in accordance with the working life requirements of the field. Compulsory studies are 12h/y and vocational studies 36h/y.

UK:

There is no specific time requirement for sustainability or climate education in either general or vocational programmes. Some technical and vocational programmes such as land-based or engineering courses have much more of this content than others.

Spain:

The commitment to education for sustainability and climate education in Spain is implemented similarly across both general education and vocational/technical education. Both types of education are expected to incorporate sustainability and

climate education into their curricula, recognizing the importance of these topics for all students, regardless of their future career paths.

In terms of the number of hours per year, this can vary depending on the specific course of study and the level of education. However, sustainability and climate education are generally integrated into multiple subject areas throughout the curriculum, rather than being taught as a standalone course. This means that the amount of time dedicated to these topics can vary depending on the specific subject and the grade level.

At the primary and secondary levels, the Spanish curriculum includes specific learning outcomes related to sustainability and climate education in science, social studies, and environmental education classes. In addition, the core competencies that all students are expected to develop during their education include knowledge, skills, and attitudes related to sustainability and environmental awareness, which are integrated across all subject areas.

At the post-16 level, sustainability and climate education are integrated into vocational and technical education programs, as well as higher education. For example, the Spanish Ministry of Education and Vocational Training has established a series of initiatives aimed at promoting sustainability and climate education in vocational and technical education, including the development of specialized training programs and the incorporation of sustainability into industry standards.

Overall, the commitment to education for sustainability and climate education in Spain is implemented across both general education and vocational/technical education, recognizing the importance of these topics for all students. The amount of time dedicated to these topics can vary depending on the specific course of study and the level of education, but sustainability and climate education are generally integrated into multiple subject areas throughout the curriculum.

6. What support is available for teachers and colleges to ensure that this commitment is implemented?

Netherlands:

It is considered as common sense to be responsible with materials when you teach a subject.

Italy:

A specific focus has been given to teachers training as a way to support schools. The training regards objectives, tools, contents of the macro-areas of Civic Education. A National Technical scientific committee and Indire (Institute of Research and documentation) support teachers through seminar, webinar, networks and collaboration and strong partnerships with national bodies as Carabinieri Corps.

Latvia:

For “Environmental science” subject, as well as for all other subjects that are taught in Latvia, there is a programme standard. This standard includes topics and explanations what students should be taught and what are the expected outcomes. Some materials are also public and accessible for teachers, and can be used in the learning process. One example can be found here: <https://skola2030.lv/lv/skolotajiem/macibu-prieksmeti/dabaszinibas>

Austria:

- ESD is a mandatory subject of the Austrian teacher training
- the Austrian ÖKOLOG network (Over 600 schools take part in the ÖKOLOG network, over 150,000 pupils, 16,000 teachers, 10 colleges of teacher training and one educational board) is a programme for environmental education and school development at Austrian schools. It was initiated and is supported by the Austrian Ministry of Education. It supports teachers and headmasters to initiate ESD projects and tries to motivate schools to become an ÖKOLOG school which implies certain requirements (a. Create school consensus, b. form a school team and select a coordinator, c. analyse and evaluate the ecological state of the school, d. set priorities, e. formulate goals, f. plan projects & measures, g. implement and document projects and measures, h. control success & reflect, i. inform & communicate: celebrate successes and strengthen the team spirit, h. take over successful projects in everyday school life). The ÖKOLOG network also funds all kinds of sustainable school initiatives and school projects.
- There are support programmes for initiatives, projects and teaching material: all kinds of teaching material on ESD is available prepared by organisations like the Association for Environmental Consultancy (Umweltberatung), the Environmental Education Forum (Umweltforum) or by Ministries (e.g. Federal Ministry of Education, Science and Research).
- An education reform in 2017 gave more autonomy to the schools (for teachers, headmasters and students) with more freedom of educational design for the individual schools and the possibility of regional educational concepts.

Finland:

Vocational teacher training college has sustainable development a part of studies. It is related to professional education, which concerns learning and competence related to the profession.

Vocational education includes things related to production and services as well as issues related to society and socialization more broadly, individuals' own educational goals

and issues related to nature, such as sustainable development. Many organizations organize trainings for teachers, where you can update your skills.

UK:

The AoC offers practical support to colleges, the Education and Training Foundation (ETF) runs staff development programmes which covers skills for sustainability, and these are embedded in the professional standards for teachers in Further Education. There are also a number of independent agencies and campaign groups which provide resources and briefings which can support sustainability and climate education post-16.

Spain:

In Spain, there are various types of support available to teachers and colleges to ensure that the commitment to education for sustainability and climate education is implemented effectively. Some of the key types of support include:

Curriculum guidelines and resources: The Spanish Ministry of Education and Vocational Training provides curriculum guidelines and resources that include information on sustainability and climate education for different subject areas and grade levels. These resources can help teachers incorporate sustainability and climate education into their lessons and provide guidance on the knowledge, skills, and attitudes that students should develop.

Professional development opportunities: Teachers and colleges can participate in professional development opportunities that focus on sustainability and climate education. These opportunities can include training courses, workshops, and conferences that provide educators with new ideas, strategies, and resources to incorporate sustainability and climate education into their teaching practices.

Grants and funding: There are various grants and funding opportunities available to schools and colleges in Spain to support the implementation of sustainability and climate education initiatives. These can include grants for developing and implementing new programs, purchasing equipment and resources, and supporting teacher professional development.

Networks and partnerships: Tknika is a center of innovation for vocational education and training (VET) that supports VET centers with the implementation of sustainability and other innovative practices. Tknika offers a range of resources and support to VET centers to help them incorporate sustainability into their programs, including: training courses and workshops for VET teachers and staff on sustainability and related topics. These courses provide educators with the knowledge and skills they need to incorporate sustainability into their teaching practices, Curriculum development, Environmental audits and Research and development.

Support from environmental organizations: There are several environmental organizations in Spain that offer support to teachers and colleges to implement

sustainability and climate education initiatives. These organizations can provide resources, training, and advice on how to incorporate sustainability and climate education into different subject areas.

7. What have you found most useful about what you've learned from other countries in the Expect project?

NETHERLANDS

Every country has valuable examples. Visiting colleges and hearing from companies and local government cities gives good understanding of the work being done. People are often full of pride in what they do around climate change.

It is very important to put all these issues on the agenda. The importance of teaching Carbon Literacy and lobbying government was a takeaway from the UK. The constitution in Italy was an eye-opener, in that it pays attention to the planet. It was good to hear about the eco-schools movement in different countries. The ISO system at Orge in Latvia and in Bilbao. The fact that in Spain the government pays for a sustainability co-ordinator at every school.

The brilliant support of the Finish government for sustainability in education. The fact that Austria provides a course to become a technical manager learning all kinds of techniques.

FINLAND

Learning about different schools, countries and learning systems under the sustainable and climate change topics. Understanding the needs, resources, technical possibilities in all the countries within the project.

SPAIN

The Basque strategic lines aligned with the European green deal. The Basque government and VET centers are all working together in this direction.

LATVIA

The experience of sustainability practice and the approach to it, as well as raising awareness. Latvia could definitely learn from this, especially about raising the awareness amongst students.

AUSTRIA

Each country has some interesting aspects to offer when it comes to best practice examples for sustainability teaching or activities in VET.

To see the many good practices is a very motivating thing and adds an emotional aspect that is very important.

There are many different ways to engage people (students, staff, companies) interested in joining sustainable initiatives and it is important to find a good way to disseminate these best practices, e.g. by an online platform

ITALY

The idea of Sustainability as a Global Goal can be seen in the strong contribution that Austria made on establishing education for sustainable development on both National and European level. OKOLOG as the largest network in Austria for schools.

From Spain we liked the structure of their apprenticeship system-based half on theoretical education and half on practical training.

Students' motivation is supported by their direct experience in companies, and they are paid too. The strong collaboration between schools and basque GVT, the coordinators of Agenda 2030 and even with families and industry on territory. Students can consolidate their competences and become Environmental students and provide lessons to other students. BBK Bank is a very good example of a private bank whose profits go to a foundation which works for a more sustainable town.

From Latvia, the presentation of the educational system by the Ministry of Education and Science and the emphasis on all the investments made by the GVT in VET schools on green educational approach in every order of school. The creation of a Latvian youth song and festival dance and the opportunity to promote climate awareness.

The presentation by a group of students who created beeswax food wrapping and clothes in alternative to plastic.

The visit to the Ogre College, in particular the Department of Forestry and wood production.

From Finland, the presentation from the Ministry of Agriculture and Forestry about their Carbon Capture programme. The distillery project as an example of a new solution as a biogas fuel and steam power.

Plumpton college was spectacular and the UK's Climate Commissioner for Further Education was very inspiring. The Greener Sussex collaborative project and the aim to support the implementation of Carbon literacy into existing courses for students.

The College as a sustainable building in the Netherlands and the range of green courses and projects offered.

UNITED KINGDOM

Every country has a lot to offer and many of the best ideas are potentially transferable. There were some common strands: the benefits of government policies and frameworks, strong institutional commitment, meaningful links with green industry employers, the visibility of the Sustainable Development Goals, the benefits of interdisciplinary and problem-based approaches, the active involvement of the students themselves.

8. How do you think Sustainability should be embedded in VET schools?

Are the Goals a good basis for Curricula design?

NETHERLANDS

ESD should be embedded in VET, focussing on the relationship between ESD and the specialist vocational programme.

The SDG's address care for each other and care for the planet. Paying attention to the climate targets has to do with care for the planet.

Learning about care for each other is still an important subject. Paying attention to the planet and the climate targets is new. These have to be implemented as well. So it is better to address energy transition, circular economy and climate adaptation (ECC) separately. The big picture are the SDG's but the focus on ECC is new.

FINLAND

Perhaps more integration of studies overall, as we have a program for learning about sustainability and also a new optional study in climate responsibility. UN Sustainable Development Goals are good as a part of curriculum.

SPAIN

Transversally in all subjects. Support from institutions to VET centers such as Ökolog in Austria or Ingurugelak or Tknika in the Basque Country.

Sustainable week where all projects run by the students have to include sustainable topics

LATVIA

I think that during the last PLA in the Netherlands it was shown the best way. Teachers and students are aware of the sustainability, climate changes, etc. They know what can be done in order to contribute to them. Additionally, students creating sustainable projects. As for the UN SDG, yes, that it is a good base, as it is known around the world, most of the people are aware of the goals, and it presents main topics (goals) that must be achieved. Based on them, it could be easier to prepare the curriculum.

AUSTRIA

Education for sustainability should be embedded in VET and all other educational institutions as a necessity. It seems that in all EXPECT project partner countries the subject is present on different levels but only a few countries are really willing to give it full attention (subsidies, implementation in all curricula, sustainability teachers etc.)

The ideal way would be that sustainability issues are embedded in all school subject curricula, until then, it might make sense to offer modules that can be used by teachers of all VET branches.

The SDGs are a good starting point for raising awareness and that sustainability issues go much further than pure teaching matters (gender equality, health, working conditions and so on).

ITALY

Education for Sustainable Development has to be implemented across all the disciplines. Every school has to adopt a whole-institution approach to green issues.

Identify specific knowledge and skills applicable to specific sectors, to the integration of transversal skills linked to Sustainable Development of education.

VET schools and programs will be the key to achieving both the 4th goals on quality, education and the 8th on good job and economic growth. The 17th goals have to become the heart of teaching.

UNITED KINGDOM

The SDGs are a useful framework to map our curriculum to. Embedding of sustainability has to be integrated at all levels; institutional policies and targets, curriculum content, student development, community and employer links. It is important to build staff support and professional confidence and this can take time.

9. What further improvements do you think are needed in your country's educational system to ensure education for sustainability is well embedded? What are the most urgent actions?

NETHERLANDS

Many things we have seen are good examples of sustainability in general. Not many were really related to the climate targets and ECC. This has to be improved a lot also in the buildings. So I noticed we are just at the start of paying attention to ECC and hopefully this will change in the future. In the Netherlands it is now in the qualification files. In other countries I think this still has to be achieved. Then you need training materials and facilities, education of the teachers and embedding it into the exams.

FINLAND

We already have a very good competence for sustainability in our education system in Finland. As an improvement, we would need more concrete examples.

We have new assessment criteria from 1.8.2022 and the scales of assessments changed during the same process. We now also have Environmental Studies.

SPAIN

Training of teachers.

Economic support to VET centers to accomplish energy transition.

Include sustainability in VET curricula.

LATVIA

Make it mandatory. Students and teachers are not aware of the sustainability and climate changes at all or know very little. Right now, it would be important to make some study courses for teachers to educate them, so that they could pass the knowledge to students. Additionally, more information should be available on this, e.g., posters in premises.

AUSTRIA

Austria has issued a "decree" for sustainability teaching but so far this is not mandatory. So the next step would be to make sustainability teaching mandatory for all school systems which includes VET. The ÖKOLOG Schools movement which is supported by the

Ministry of Education is a good initiative but as mentioned many times before it all rests on the shoulders of teachers who are willing to sacrifice their private time and energy for sustainable teaching and sustainable initiatives at their school.

The Ministry of Education needs to follow through with financial and legal, implementation of sustainability teaching and sustainability activities including a sustainability coordinator in every school.

Broad dissemination of successful best practices on sustainability issues in schools

Implementation of "sustainability days or weeks" in each school

Most urgent action that should be taken: official initiative by the Ministry of Education to implement sustainability teaching in VET schools and other educational institutions

ITALY

Improve the use of innovative strategies of learning and teaching practices through European partnerships and Erasmus projects;

Create the conditions for developing opportunities for a work-based education abroad.

The most urgent actions are to make learning for the green transition a priority.

UNITED KINGDOM

We need much more systematic embedding of sustainability within all course specifications, greater staff training and resource production.

10. What action will you now take back for your educational system to better meet climate targets and promote Sustainable Education?

NETHERLANDS

I have seen some great equipment in schools in Europe and I hope our school will invest in them too.

FINLAND

More SDG goals applied and explained to both students and staff. More student opinions and also different occasions where these topics are spoken out and also open for discussion.

SPAIN

Organization of a “sustainability week” with teachers, students, staff and companies

Training of teachers

Transforming VET centers to sustainable centers.

LATVIA

I really think that student projects is a good initiative. It helps students to better understand sustainability itself and it helps to promote sustainability as well. But again, it is essential to make it mandatory in educational institutions in the very beginning. As we are having a project in which the learning programme for the students will be developed, I believe that we can include some of the practices in it.

AUSTRIA

Organization of a “sustainability week” with teachers, students, staff and companies seems very efficient to get everybody in the boat

Dissemination of best practice examples to motivate and inform about sustainability issues in VET. This shows what is feasible and already happening in Europe.

ITALY

The development of a Dual system of education even in Italy on the model of Austria and Spain;

Create a work-based compartment in relation to local production environment;

Building up a permanent training for teachers and staff towards sustainable education;

Equip the school of solar panels and activate a serious policy of waste recycle;

Create CoVE Centers of VET Excellence through the support of networks;

Provide all learners with opportunities to learn about the climate crisis in formal education and extra-curricular activities.

UNITED KINGDOM

We need to ensure that colleges in England are aware of some of the best practice in Europe and to work more closely with student and civil society organisations to advocate for the kind of systemic changes needed.

11. How will this action include partnerships working between education providers industry and other stakeholders?

NETHERLANDS

To teach the climate targets you need specific equipment and knowledge from industry. The only way is to implement together, so working together is most important.

FINLAND

The study units automatically include this in the curriculum and as the teacher does evaluation of the students competence demonstration. Also in the future, possible theme days or occasions to share information between education providers, industry and other stakeholders.

SPAIN

Key the close collaboration between the government, municipalities, educational centers and companies.

LATVIA

I think that project development should be carried out based on the needs of particular companies. This would happen through direct cooperation between school and companies. Of course, here in Latvia, it would be also important to involve ministries.

AUSTRIA

In the course of the project we have seen great examples about partnerships between education providers and the industry: e.g. strong partnerships between the VET school in Bilbao and companies, also in s'Hertogenbosch and in Finland. In Austria, centres of vocational excellence are piloted right now which also try to strengthen partnerships between the industry and educational institutions.

ITALY

The 1st action will be to equip learners and educators with the knowledge skills and attitudes needed for a greener and more sustainable economy and society.

2nd action create a shared understanding between education, industry and stakeholders on the deep changes needed in education and training to face transition.

3rd action provide paths and synergies between green and digital agendas.

UNITED KINGDOM

Employers are increasingly aware of the need for their staff to have green skills. Colleges work closely with their local employers and we need to provide them with the ideas, tools and resources to embed sustainability priorities into their collaborations with industry.

12. How do you want to build on the international relationship you have developed through the Expect Project?

NETHERLANDS

We should enthuse more schools and countries with our visits in which we learn from each other. This really has impact if even seven countries are coming to look what you do in the light of the climate targets. The challenge will be to involve the right partners

FINLAND

Keeping up already build good relationships between countries. Also continuing or starting Erasmus+ staff/student mobilities and perhaps in the future projects together.

SPAIN

We can keep sharing news related to sustainability, raising awareness and learning from each other. We can keep working in new projects.

LATVIA

The best way would be through a follow-up project. It would be a good idea to involve additional schools and teachers somehow. There are many ideas: handbooks, trainings, conferences, training programme development based on the best practices from each country and piloting it, etc. Additionally, we would definitely include more people from our organisation in the activities of the project (e.g., from the policy department, as they regularly communicate with companies and ministries, and other relevant

stakeholders), so they would also get the opportunity to learn from other countries' policies.

AUSTRIA

There are many side effects, the Austrian VET school HTL Spengergasse will cooperate with the Helsinki VET school and work on projects in the future. These projects are incubators for further cooperations.

We are interested in an Erasmus+ follow-up project of EXPECT that could be the making of a European platform on sustainability teaching/initiatives for VET providers.

Since we are doing and will do further research projects on sustainability issues in VET, we will stay in contact with the EXPECT partners

ITALY

Through the participation to other Erasmus projects so to exchange knowledge, tools and competences working in Expect

To be active in bringing forward initiatives and events linked to the main issues of the project.

By the diffusion of European learning and planning in progress in our Institute in the sector of education and training to the other schools on our territory, to the local authorities and to the stakeholders, through learning projects environment and infrastructures.

UNITED KINGDOM

Sadly, UK providers will no longer be able to be full partners in Erasmus+ projects but we would welcome the opportunity to continue to be associated with this work. One idea is an international project on the benefits of project / problem based pedagogies across Europe.