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## **Young Energy Experts working for climate-friendly schools**

### **The EUKI-project YESclima<sup>1</sup>**

#### **Part III *The energy-transition studies in Berlin***

#### **Final report**



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<sup>1</sup> The project was promoted by the European Climate Initiative (EUKI), from the German ministry for environment, nature protection and nuclear safety

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## I. general overview

The SFZ's main task was to organise a 14-day advanced training for the teams with the aim to give impulses from activities in projects in Berlin for their work on site in Greece and Spain. The training consisted of two weeks for each team:

- January 2019 with 8 participants, 4 from Greece and 4 from Spain
- August 2019 with 8 participants, 4 from Greece and 4 from Spain
- March 2020 with 6 participants, 3 from Greece and 3 from Spain.

In the **first part** we did present lectures and arranged informative visits to innovative activities and projects which might be promising for a climate-friendly use of energy in the home-regions of the students. It had to be outworked how far these projects are instructive for their work in developing energy-audits and proposals to change particularly school-buildings and their energy management in a more "climate-friendly" way, saving energy and using renewable energy by the building itself.

A central topic in the Berlin-studies was the use and operation of natural technics in the provision of energy. For example,

- cooling by greening the buildings or by using evaporation of water. By intelligent ventilation with less of none energy to be fed in.
- Using geothermie together with heat pump for warming and cooling inside.
- Using solar thermic combined with heat storage in the earth.
- Energy management in institutions and buildings.
- Schools with low-energy standards.

### **In The second part we offered an Interactive Seminar:**

"Aspects of „Employability“ and „Entrepreneurship“ in a Sustainable Society and Economy". For these task the institute FIAP e.V., Forschungsinstitut für innovative Arbeitsgestaltung und Prävention.

The activities consisted of three parts:

- Employability / Managing and Designing Educational and Occupational Biographies. New occupational biographies were discussed, with the task to describe and design one`s own educational and occupational biography.
- Responsible Entrepreneurship in a Green Economy. This part was dedicated to explain particular challenges and solutions of the labour market in a green

economy and the entrepreneurial skills making sense and being necessary for entrepreneurship in a green economy.

- Individual Business Models for Self-Employment in a Green Economy. The task for the students was to elaborate feasible projects and business models in green economy. The outworking was done by students from both regions together, so developing “transnational” projects to be realized simultaneously in Greece and Spain.

The third study group in March 2020 had to return home after one week due to the beginning of the Corona-lock-down. Nevertheless, the study and project part in Berlin could be almost completely carried out. The second part of the programme, the training in entrepreneurial skills, could be carried out completely in the digital workspace.

## **II. Report on the training program in Berlin**

### **1. The Urgency of Climate protection**

We agreed on the emergency of the global climate crisis and the necessity to act quickly and profoundly. Mutual information and discussion was concentrated on the **tipping points** in climate change, with far-reaching consequences accelerating the global warming: the braking of the arctic ice and the Greenland shield, the danger of change in the oceanic streams with far-reaching climatic consequences, the melting permafrost in the subpolar region with growing methane- and CO<sub>2</sub>-emissions in consequence, the change of the jet stream, the methane emissions to be expected from deep ocean grounds. We took into account realistic calculations of the maximum budget for carbon emissions, which must not be exceeded for limiting the global warming to 1,5 resp. 2 degrees in relation to preindustrial time.

### **2. The European Green Deal (EGD)**

The European Green Deal, presented by the European Commission in December 2019, was discussed in its different parts, as well as the targets, which have to be accomplished by the National Energy and Climate Plans (NECP) and corresponding activities in all member states.

In discussing different measures elaborated by the EGP our main focus was upon the consequences of the demand of a high quantity of qualified experts in many different fields and professions to realize the targets, the measures and the activities in climate protection intended by the EGB. In the next years qualified personnel in the sectors of renewable energies, energy saving and energy efficiency will be required on a large scale. In this context, we presented and discussed the results of the ZEW-Klima study commissioned by EUKI, elaborated in the province of Cádiz and the metropolitan region of Athens, just the regions of our team.

### **3. Energy Autonomy on Regional Level**

As an example of successful efforts to make regions autonomous in energy, we discussed the activities of a regional district in Germany, the "Rhein-Hunsrück Kreis" (RHK) in the Bundesland Rheinland-Pfalz. In several aspects the district is similar to the the intercommunal association "La Janda" (LJ), the "work-district" of our project in Spain: Both are composed by small towns and villages, highly similar in extension and in its population size and characterized by a formerly rural economy which has (RHK) changed or which has yet to be changed (LJ) to small and medium-sized enterprises in the industrial and service sector.

Within 20 years, the German district has achieved the full supply of electricity provided by wind-craft and photovoltaic, exporting at the same time electricity on a large scale. The region presents successful efforts to save energy in the public sector, in companies and in households. A large proportion of the heating systems has been converted to wood chips harvested in the region itself and mainly from waste wood in gardening, parks etc. The region has benefited significantly from this development in its economy, its public revenues, in creating new and innovative enterprises and in offering more opportunities for qualified work in the sector of energy transition and a high employment rate in general.

We discussed the feasibility of regional energy autonomy in the team's home districts. Decisive for the success in RHK were

- Strong impulses given by inhabitants engaged for ecology and peace.
- Cooperative and sometimes directly engaged local politicians and administration
- Investment funds formed by inhabitants of the middle class and small enterprises as actors in the necessary economic and financial activities
- A relatively fair distribution of agricultural land, with a significant proportion of communal property; so that the towns, villages and small land owners receive the tenant prices from the energy-use of land

Not all of these favourable conditions do exist in the “reference regions” of Southern Europe. On the other hand, the conditions for the use of solar energy are significantly more favourable, because of the existing solar irradiation

#### 4. Green roofs and plants for cooling effects, combined with solar energy



*On a green roof of UFA-Fabrik with solar panels moved by the sun. Photos H. Berger*

Combined with lectures concerning the energetic and cooling potential of evaporation and the technique of adiabatic cooling, we visited two different buildings in Berlin – the UFA-Fabrik, and the Institute for Physics of the Humboldt-University. The following results seem to be relevant to reorganize buildings like schools in Greece and Spain:

- Green roofs with plants, which should be resistant against dryness. The soil should be mixed with extended clay ( in UFA-Fabrik 50%-50%), which is conserving much more water than normal soil. Because of being much lighter than soil (4:10 relation), it is preferable on roofs, too. In southern regions of Greece and Southern Spain it seems necessary to test, if the combination of plants with extended clay will give sufficient resilience against the dryness at summer time. We recommend also to use regional plants being particularly resistant against dryness (mainly Sedum plants). In UFA-Fabrik as well as in the Institute of Physics, the plants on the roofs resisted over a long period and

without being irrigated even in the summer 2018 and 2019 under unusually extreme heat and drought. The plants on the roofs can and should be chosen under the aspect of bio-diversity: So, in the "UFA-Fabrik", on every green roof 40-50 different plants are growing.

- Green roofs are useful for the inner climate of buildings because of their potential of insulation; furthermore they are lowering the temperature in the immediate environment of the building significantly..
- Solar panels, which are changing their position depending on the daily movement of sun. The change of the panels in UFA-Fabrik is arranged by a fluid system, so the panels are turning around together with the sun-movement, without any use of computer and external energy to turn them. Such a system will give more results than inflexible solar panels, oriented only to the south.
- The solar panels are combined with green roofs, giving the positive effects explained above. The panels can and should be arranged in a manner not hindering the irrigation of the plants by rain.
- Further cooling effects in and outside the buildings could be realized by green facades, by plantation of wine-growing plants as wisteria (glyzinia), wine and/or knotweed, thus improving the micro-climate by shadowing, by filtering dust out of the air and by cooling via evaporation of the plants.
- For the irrigation of roofs and plants thereon collected rainwater should be used (see 5.)



## 5. Rainwater-management

We visited different places and buildings in which the rainwater is managed. In general, collecting and using the rainwater does improve the environmental and life quality in urbanized areas. For our task - to improve school buildings in a more climate-friendly sense – the collected rainwater could be used for irrigating the green roofs, planted facades and the green areas in the surroundings of the building. To improve the local climate it is recommended to unseal as much as possible paved and asphalted soil in the surroundings.

The rainwater to be managed is “harvested” from paved areas in the surroundings, to be saved afterwards in containers in the underground before using it. It is recommended to install systems of cleaning before conserving the rainwater, in case it should be contaminated by the pavement,. The most ecological way of cleaning are pools on site planted with reed. In a more elaborated project, rainwater can be used also for flushing toilets, so reducing considerably the consumption of tap water. To put rainwater in such a use seems considerably important in regions suffering from lack of water and expecting severe water crisis.



Rainwater “harvest” in a basin (bottom left on the picture). Photo S. Stragies

## 6. Using Straw to insulate Buildings



*thermal insulation with straw*

The rural regions of Greece and Spain are characterized by century-old, elaborated traditions to build houses using regionally available natural materials. Therefore, we have included construction with straw and clay in our work program. We just discussed the use of these materials for the thermal insulation of buildings. In the current season it wasn't possible to visit a house project at work, so we limited the learning unit to a model house already accomplished.

Using pressed straw bales is a convincing and feasible method of thermal insulation. To guarantee stability, it is recommended to tie the bales into a wooden stand construction. The straw bales are preferably plastered with loam, alternatively with lime, whereby the time sequence should be short in order to prevent the penetration of mould-forming fungi, for example. In Germany, a wall insulated with straw made in this way is accepted by the existing regulations for fire protection. A wall made of straw bales and covered by clay is slightly more secured against fire accidents than thermal insulation with polystyrene.

Other advantages of straw insulation are its health quality, the low energy input in production, environmentally friendly waste disposal and regional availability, especially through grain cultivation.

To build and to insulate with straw as well as with clay are convincing and, paradoxically, at present innovative in regions with similar popular traditions in constructing houses. Alternative regional products for thermal insulation could be other regional resources for the insulation of buildings, for example reed, sheep-wool, cork from the forests and shells from the sea-side.



## 7. Solarcity Berlin

An employee of Berlin Department for Energy presented and explained the "**Master plan Solar City Berlin**", decided on just some days before (10<sup>th</sup> March) by the regional government of Berlin.

Starting point of the master plan is an analysis of the solar potential of the roof areas throughout the city: they can provide about 25% of Berlin's current electricity needs at present. The target of Berlin is to cover 2050 100% Berlin's electricity completely (100%) by sun, wind and biomass. So, the city has to

- make use of the corresponding solar potential as soon as possible
- unlock the solar potential on public buildings
- support private building owners by the installation of solar systems
- Since Berlin is actively involved in climate adaptation, the installation of photovoltaic systems should be combined, as far as possible, with the plantation of green roofs. (Even more strongly recommended in cities of Southern Europe with its more densely urbanization and higher summer temperatures).

The master plan was elaborated in expert meetings, workshops on specific topics and public events, in which NGOs and engaged persons in the city participated. A result of the expert group was a catalogue of 27 measures in 9 fields of action to attain the solar-city-targets as soon and efficient as possible.

Of particular interest to us was the transferability of the concept to urban centres in Southern Europe. To become a "Solar City", it seems to be most effective to start with the building stock in public ownership and with buildings of private companies. For blocks of flats with owners' associations, frequent in Spanish and Greek cities, and for houses with private owners, we plea either to lease the roof areas to solar companies or to offer energy contracting between companies and the owners.

In any case, the city needs central players and driving forces like the public enterprise "Stadtwerke Klima" in Berlin. Just in January 2020, the city of Cádiz has started a promising initiative: together with the municipal electricity company there will be offered help and advising to enterprises, administrations and private owners to put photovoltaic on the roof, selling the yield to the company or using the yield for prosuming (production and consumption). The advising will include the planning, installation, clarification of legal issues and all necessary administrative steps. Due to the much stronger solar radiation in Cádiz, 1.8 times more than in Berlin, and now favourable regulations for solar prosuming and the neighbourly networking of solar power, the prospects in Cádiz are more promising than in Berlin: The Cádiz-target is to cover 27% of the city's electricity requirements with photovoltaic power by 2030.

## 8. Solar Centre Berlin

The lecture on Solar City Berlin was combined with a visit of the Solar Centre Berlin, founded by the “German Association for Solar Energy (DGS)” and financed by the Berlin government. Main tasks of the Solar Center Berlin are:

- Consultation on solar energy including on-site visits and assistance in the evaluation of offers.
- Information services for craft companies, architects and engineers.
- Presentation of best practice examples.
- Trainings and qualification programs.



*Our group in the Solar Centre Berlin. Photo S. Stragies*

## 9. Heating with Renewable Energy

*in the building complex of the housing company “Märkische Scholle” in Berlin*

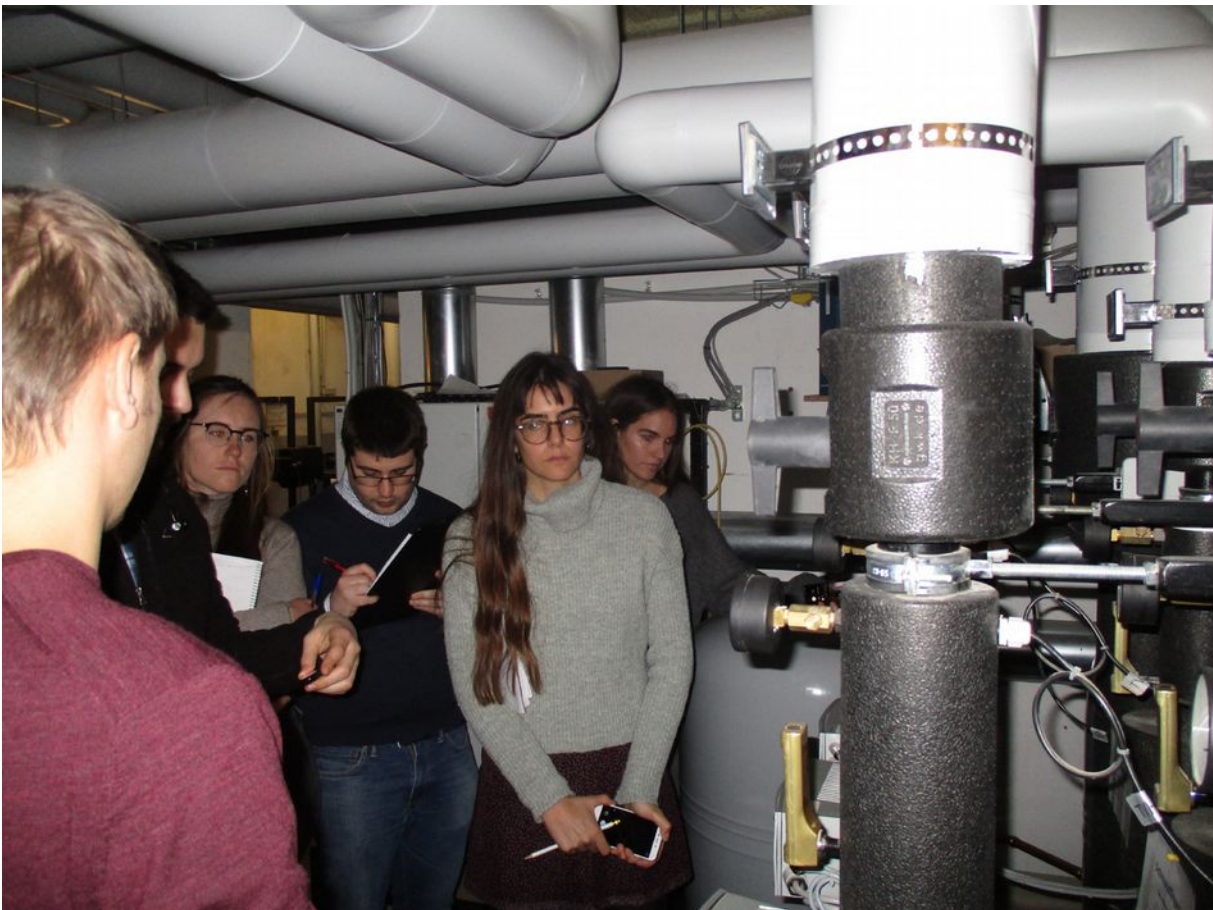
The cooperative is managing a building complex with 841 flats, constructed 85 years ago. Lately all buildings were refurbished by thermal insulation, equipped with a new heating system that combines thermosolar, heat storage in the earth, the heat recovery from waste air and photovoltaic.

We visited the heating system. Its central part is a low-temperature heating system that operates using two electric heat pumps. Their power supply is mainly provided by photovoltaic modules. The energy for heating is obtained from three sources (solar thermal, ventilation systems with heat recovery, geothermal heat). Outside of the building there are areas in underground and insulated to the environment serving

as storages for the overshoot heat of the thermosolar panels used in the cold season. The interplay between heat supply and storage is automatically controlled by a dynamic energy manager.

The aim was to make the building, and thus each individual apartment, completely self-sufficient in renewable energy through the coordinated use of solar and geothermal energy, exhaust air heat and heat recovery. Up to now, the aim is reached by 80%. Holding into account the reduction of energy demand by the thermal insulation, the use of fossil energies is reduced by about 90%. The rental fee for the tenants grew only moderately, because of the reduction of energy costs necessary for the flats.

Can the experiences from the 841-apartment project in Berlin be transferred to southern European conditions? In a winter normally far milder, it seems possible to provide the heat supply completely by combining thermosolar panels, geothermal storage, photovoltaic and the use of exhaust air heat. The resulting costs for tenants and owners, which are considered moderate by the company in Berlin, should have to be checked on site.



*In a control center in the basement of the building complex. Photo S. Stragies*

## 10. Innovative Energy Engineering in a new Building

We a guided visit of the energy system and management of the building of the daily newspaper "taz", just finished end 2018. For the targets of our project, the system of cooling is particularly interesting:

The building prevents the interior from overheating through efficient insulation and effective sun protection on the facades. The thermal storage capacity of the building material has positive effects too: it warms up more slowly and absorbs the coolness of the night. Recirculating air technology with climate convectors is used for the interiors. An "adiabatic" system on the roof with evaporative ventilation is lowering the temperature of the water using normal tap water. (A preferred solution, the use and the evaporation of rainwater, could not be realized because of an incomprehensible veto of the waters works in Berlin). The water with a lower temperature is transferred by pipe-system in the interior of the building. In the first summer 2019, just at a time of exceptional heat (in Berlin near 40 degrees) the cooling system, was sufficient to keep a maximum temperature of 26 degrees Celsius inside the buildings: The inner climate was felt as agreeable, compared with the heat the users suffered outside the building.

In the cold season, the pipe system is used to heat the rooms; the heating capacity will be taken from the server centre of the newspaper and from the restaurant and the kitchen area. (The additional heating on frosty days is provided by a district heating system to which the building is connected).

In the taz building, a ventilation system with energy-saving climate convectors is used. The staircase also serves as an exhaust air conduct. The exhaust air is led to the convectors where it is cooled and recirculated together with the outside air.

## 11. Energy Management in the Free University (FU) Berlin

At the FU Berlin, - with 11 departments, 32.500 students and about 500 professors – there exists since 2002 a "Unit for Sustainability and Energy Management". Its results, put into numbers, are promising:

- reduction in energy consumption 2001- 2011: -26%
- reduction in heating oil: -99%
- reduction in heat consumption (without increase): -35%
- reduction in CO<sub>2</sub>-emissions without increase in floor space: -36%
- reduction in CO<sub>2</sub>-emissions in electricity (own PV-capacity: 675 kW plus contracts of deliverance from green energy companies): -81 %
- avoided costs due to the reduction of energy consumption: 4.2 million €
- aggregate avoided costs since 2003: 42.7 million €
- accumulated costs for investments to reduce energy use :20.2 million €

Decisive to reach these goals were amongst other things:

- A permanent working staff for energy management in the unit.
- Voluntary environmental teams (employees, students, professors) in the departments and buildings, being occupied with the "every day energy management" and other themes of environmental relevance in the work places and surroundings.



- Introduction of a “bonus system” in energy reduction: starting from accorded baseline adjustments per year, each department receives an increase in their yearly budget, amounting to 50% of the value gained by energy reduction (temperature adjusted); vice versa the budget will be reduced in the same proportion.
- Introduction of a green IT-programme to overview and control the energy consumption in all departments of the FU.

## **12. A low-energy Primary School**

With the “Niederheide Grundschule” we visited a new primary schools nearby Berlin. It was built in a low-energy standard until 2011, with the ambition to be developed to plus-energy standard in the following years. Part of electricity is delivered by PV-panels, combined with green zones on the roof. Unfortunately the cogeneration heat/ electricity originally planned could not be realized. Wooden pellets are used for central heating.

The school has a capacity of 550 pupils, its costs to be build amounted to 12,3 Mio €. The building-envelope is “passive standard, with 3-glass windows. The system of air conditioning is mainly “natural” in the school breaks, only partially added with an energy-driven system. The illumination is minimized by construction of the rooms and large dimension of windows. As the classrooms are mostly oriented to the south, in wintertime much energy for heating can be gained by the sun; in summertime a system of shadowing in the outside parts iprevents against too much heat.

Furthermore, the material of ceilings in the rooms – reinforced concrete – conserves less outside-temperatures at night. Naturally, the illumination is done by LED.

### 13. SMART ROOFS for Climate



As a result of their study-trips in Berlin, the second team elaborated the following proposal particularly promising for urban areas in Southern Europe: **“Smart Roofs for Climate - Combining green roofs with solar power and cooling “**

“In our home regions we have to take care to reduce greenhouse gases and also for climate adaptation, in particular during extreme heat periods. Thus, our proposal is to combine the roof-greening of buildings with solar panels moving with the course of the sun, so giving more power during the day. The roofs shall be cultivated with plants, which are resistant against dryness, sowed in a soil mixed with material conserving rainwater, for example by extended clay. At the same time, the green zone on the top insulates the building to a certain extent and cools in hot periods the environment via the evaporation of the plants.

Because of serious periods of water scarcity to be expected in the near future, in the outside of the buildings we recommend “rainwater harvesting”: to collect the rain in artificial lakes or subterranean stores, to irrigate trees and plants in the surrounding and, more sophisticated, also for water flushing in toilets.

We think of combining the green solar roof with an innovative system of cooling buildings, which was elaborated and is at present tested by scientists in the universities of Sevilla and Cádiz. This system, named “CAVE”<sup>2</sup>, seeks to exploit the possibilities of cooling by evaporation and ventilation, combined with a thermal

<sup>2</sup> CAVE abbreviates “Cubierta Activa Ventilada y Evaporativa”

insulation of the roof. This same concept was applied in the energy-audits which are elaborated by the YESclima team of Cádiz for schools in towns of the province. Now we think to propose it for urban buildings in general.

The cities in our home regions offer great opportunities, but have also to cope with dangerous weeks in summertime. The opportunity is the power of sun, giving much better results in generating electricity than in Northern European areas. The danger consists in extreme heat periods causing serious water crisis. Let us combine the fight against the growing climate crisis with our activities for better life quality in our cities.

### **III. Activities on European Level**

A central aim of YESclima was to demonstrate that climate protection is not only an outstanding urgent task, but that, at the same time, the various and numerous activities required for fighting against climate degradation also do open up a large variety of professional activities in climate protection, with are particularly promising for young people. So, the offer of professional activities in the labour market and in innovative entrepreneurship in climate protection can be helpful to reduce the intolerably high rate of youth unemployment in many European regions.

Therefore and in consequence of, our project work was accompanied continuously by activities on the European level.

The following engagements seem worth to be mentioned:

#### **1. The Lunch Debate in Brüssel, 7.3. 2019**

In order to present and to discuss results of the former EUKIproject ZEWclima, we arranged in cooperation with the “Heinrich Böll Stiftung” in Brussels a public conference, “lunch debate”, with the theme:

#### **HOW TO REDUCE YOUTH UNEMPLOYMENT BY FIGHTING CLIMATE CHANGE A feasibility study in Greece and southern Spain - Results and proposals**

In the debate with about 40 persons participated, members of the European Parliament, the European Commission, the European coordination of trade unions and youth organizations.

The leading questions were:

- To what extent is qualified work in fields relevant to energy chance in South European regions needed in the near future?
- What are the prerequisites for developing training programmes in the field of energy and climate protection in these regions?
- Which specific activities could be helpful to give useful employment opportunities in the field of a sustainable energy transition and climate protection?

## 2. Proposing a renewed European Youth Guarantee+

There is no doubt, the European Youth Guarantee, first decided by the European Council and the European Parliament 2013 and introduced later, is an important and in some regions really indispensable tool in offering chances and opportunities for unemployed young people in the labour market. But it can be significantly more efficient if it is applied in offering opportunities for young Europeans to be prepared and qualified for jobs and enterprising in economic fields which are necessary for a sustainable future. This is in particular accurate for economic activities suitable in fighting against climate deregulation, in defending and promoting biodiversity, sustainable mobility and ecological agriculture. As result of our discussions, we elaborated a paper giving proposals, how to renew the Youth Guarantee in order to promote job perspectives and occupational opportunities for young Europeans. To summarize our paper:

*The EU should offer young people who have yet to find work, a vocational training in professional fields being necessary for a sustainable development in Europe. The education should include an empowerment to start activities establishing a company or cooperative afterwards. One obvious area here are climate protection and mitigating the effects of global warming. We propose to amplify the European Youth Guarantee by a further EU-funded programme: “**Young people for a sustainable future**”.*

*The aim is to offer young Europeans – including young refugees with residence permits – a basic or supplementary training in professions that are important for climate protection. This training should be closely linked to practical activities and work experience, also in other European countries. It should be run along similar lines to the so-called ‘dual model’ of vocational training. The young people involved should also learn how to be proactive in the climate protection and energy transition sector, how to found start-ups and get involved in projects in the solidarity-based economy. Developing a climate-friendly energy system and climate-friendly forms of employment is a field in which creativity and a sense of initiative are particularly in demand.*

*Europe’s southern regions, which are hardest hit by youth unemployment, are best placed to employ young people in the switch to an energy transition which is based on solar power. In the coming years, they will also face more severe climate challenges than regions in the north and will have to do a great deal to mitigate them.*

The paper was sent to the responsible department of the European Commission and discussed with representatives of the Directorate General for Employment and Social Inclusion during a personal visit at the end of October.

## 3. Advances in the European Youth Guarantee

Be it as a result of our activities or be it independently from them: the European Commission has included a similar advice in updating the Youth Guarantee in the **European Green Deal, chapter 2.2.4**, (in particular in the third paragraph, the second paragraph is in accordance with the aim of YESclima, to give



impulses and resources for changing schools and school buildings more climate-friendly schools):

#### **2.2.4. Activating education and training**

*Schools, training institutions and universities are well placed to engage with pupils, parents, and the wider community on the changes needed for a successful transition. The Commission will prepare a European competence framework to help develop and assess knowledge, skills and attitudes on climate change and sustainable development. It will also provide support materials and facilitate the exchange of good practices in EU networks of teacher-training programmes.*

*The Commission has been working to provide Member States with new financial resources to make school buildings and operations more sustainable. It has strengthened collaboration with the European Investment Bank and created stronger links between structural funds and the new financial instruments with the aim of leveraging €3 billion in investment in school infrastructure in 2020.*

*Pro-active re-skilling and upskilling are necessary to reap the benefits of the ecological transition. The proposed European Social Fund+ will play an important role in helping Europe's workforce to acquire the skills they need to transfer from declining sectors to growing sectors and to adapt to new processes. The Skills Agenda and the Youth Guarantee will be updated to enhance employability in the green economy.*

#### **4. The European Youth Employment Policy and the European Green Deal**

Subsequently, we developed proposals on how the European Youth Employment Policy can be effectively integrated into the European Green Deal. For our cooperation, we found a potent and internationally networked partner in the World Future Council (WFC). Together with the WFC, we developed our memorandum

##### ***Reinforcing the European Youth Employment Policy through the European Green Deal.***

The starting point for our proposals are a consequence of the Corona crisis particularly for the youth (not only) in Europe, worsening their chances and opportunities to find work and a satisfactory professional education in enterprises. More and more it is apparent that in consequence of the measures to be taken to contain the pandemic, unemployment is rising significantly in all regions of Europe. In addition, data collected by Eurostat, supported by country-by-country analyses, showed that young people were particularly affected. The EU had already seen a sharp rise in youth unemployment since 2008 as a result of the financial crisis, especially in southern European countries.

If preventive action is not taken in account, the gradual exclusion of large sections of Europeans from the labour market could be prolonged until after the Corona crisis is to be fully overcome. For it is above all young people who are still at the start of their working lives, so

- working in sectors that are particularly affected by the crisis;
- being employed with insecure work contracts or in precarious work conditions;

- who are more often in employment in the “submerged economic sector”.

We discussed these issues with European parliamentarians, at the same time using a consultation process offered by the EU Commission too answer their questions on how to renew the European Youth Guarantee.

In our statement we paid particular attention to proposals for young people who are in a vulnerable position due to a lack of schooling and vocational training and due to their social situation: the so-called "NEETS" (neither employed nor in education- or training programmes). We explained how fields of economic activity, which will be increasingly demands in the coming years by the European Green Deal, are suitable for integrating NEETs better into work and professional life.

We disseminated our memorandum via internet media within the European Union. Together with the WFC, we organised an open digital European conference explaining our memorandum and offering comments and contributions by

- the responsible directorate general of the European Commission,
- the vice-president of the commission for industry and energy in the European Parliament,
- the president of the employment agency in Greece and the head of the European Youth, Guarantee Department in Spain,
- young people concerned with the theme,
- Experts in vocational training.

The conference took place at the end of our project period, on 12 November 2020.

We document the memorandum:

### **Reinforcing the European Youth Employment Policy through the European Green Deal**

Memorandum submitted to the European Commission by World Future Council<sup>3</sup>, the project YESclima in the European Climate Initiative “EUKI”<sup>4</sup> and the BMBF funded project GRÆEDUCATION<sup>5</sup>

*The following proposal refers to the outstanding tasks of the member states to elaborate programmes on how to apply the European Youth Guarantee and the*

<sup>3</sup> The World Future Council works on solutions to some of the most pressing challenges by finding and spreading exemplary laws and policies that have a proven record of producing positive impacts both for current and future generations, working with parliamentarians, policy makers and relevant stakeholders as well UN bodies at an international level. [www.worldfuturecouncil.org](http://www.worldfuturecouncil.org).

<sup>4</sup> In the project YESclima (“Young Energy Experts working for climate-friendly Schools”, 2018-2020), 22 young women and men from Greece and the Spanish province Cádiz, are elaborating energy-audits and proposals to make school building more energy efficient, mainly with “smart” natural techniques and using solar energy. The project is managed by the University of Cádiz (leader), the Greek NGO “Wind of Renewals” (Athens), the “Sekretariat für Zukunftsforschung” (Berlin) and the Energy Agency of the province of Cádiz (all implementers). The project is integrated in the “European Climate Initiative” (EUKI), founded and financed by the German Ministry for Environment, Natural Protection and Nuclear Safety.

<sup>5</sup> The BMBF funded project GRÆEDUCATION provides important solutions to this problem in Greece. Together with the Greek Employment Agency O.A.E.D. and the Greek Ministry of Education, FIAP e.V. and the German-Greek Chamber of Industry and Commerce are initiating collaborations between German and Greek vocational educators to “green” technical training and qualifications. In addition, the focus is also on interdisciplinary, transformative aspects, which aim at the "green" empowerment of young people.

*finances provided for this in their countries. It aims to relate the programme to green recovery policies and the challenges of climate protection in Europe in the next years.*

## **I. Introductory remarks**

The signatories strongly welcome the European Commission's initiative to "reinforce the Youth Guarantee" as part of the Commission Work Programme for 2020, and to reshape this instrument to support young people in gaining work experience and developing skills which are specifically relevant both for a green and digital transition, as well as to boost employability in the green economy. There is no doubt that the unforeseen COVID-19 crisis, which has had a firm grip on the world since the beginning of 2020, will plunge it into a deep recession. It is feared that unemployment will rise massively in all affected regions of Europe. Given the already high unemployment rate among young women and men in Europe and as a consequence of the economic depression by and after the COVID-19 crisis, the exclusion of (not only!) the European youth from economic activities will increase.

The youth labour market is highly sensitive to economic cycles and in times of economic crises, youth employment is hit more strongly by economic shocks than adult employment. Young workers are often "first out". According to the OECD, "[a]lmost 1 in 10 jobs held by workers under 30 were destroyed during the [2008] crisis. In Spain, Greece and Ireland, the number of employed youth halved between 2007 and 2014".<sup>6</sup> A decade later, youth employment has still not recovered to pre-2008 crisis levels.<sup>7</sup> Southern and Eastern European countries are most impacted by youth unemployment,<sup>8</sup> and the COVID-19 crisis is likely to critically exacerbate this situation in these regions. We would also like to highlight that in economic crises, young women in particular are more often excluded from the labour market and from economic activities.

The present situation offers a unique chance for all EU countries to reshape the economic recovery after the COVID-19 crisis into a green recovery, by implementing the goals set out in the European Green Deal (EGD) and the National Energy and Climate Plans (NECPs), according to the EU Directive 1998/2018. The EU has set an

<sup>6</sup> <http://www.oecd.org/youth.htm> (last accessed 29 May 2020).

<sup>7</sup> <http://www.oecd.org/youth.htm> (last accessed 29 May 2020).

<sup>8</sup> For example, in Andalusia, a southern Spanish region, 44.7 percent of the total population aged 16 to 25 years were unemployed in the first trimester of 2020. <https://datosmacro.expansion.com/paro-epa/espana-comunidades-autonomas/andalucia> (last accessed 29 May 2020).

ambitious goal for 2050: to reach net-zero greenhouse gas emissions. Unfortunately, we are still far from achieving this objective, which makes it more necessary than ever to redouble the efforts of member states to work in this direction. Society will have to significantly reduce current levels of energy consumption without giving up living standards. At the same time, that energy must be produced mainly by renewable sources. Europe, being a continent with a large coastline, will have to start exploiting clean marine energy to a greater extent. This will create new business and service opportunities for which today's youth will need to be prepared. To realise these aims, a well-equipped, creative young workforce is desperately needed.

In our opinion, youth employment policies generally, and the European Youth Guarantee in particular, should be geared towards increasingly preparing young people specifically for tasks and professions that are important, indeed indispensable, for the sustainable and environmentally compatible future of business and society. Therefore, support should not only be provided to accommodate young people in existing work contexts. Instead, the focus should be on employment in innovative, emerging professions that are important for a sustainable Europe and in creating jobs with a focus on "Green Skills". Activities that aid decarbonisation and quickly achieve climate neutrality are central to this. Yet in most European countries, the existing training and other measures do not cover the demand of "Green Skills" and the needs of modern labour markets. Jobs and services related to renewable energies, circular economy and sustainable development have to be created and existing professional profiles have to be redefined.

## **II. Reinforcing the Youth Guarantee**

As civil society organisations working in the field of youth employment, sustainability, and good policies, we would like to structure our ideas in 5 blocks relating to issues raised by the European Commission to discuss a redesign of the European Youth Guarantee with civil society.

### **1. What are the most significant challenges for young people in their first transitions to the labour market and in which areas could the Youth Guarantee be reinforced?**

Generally, we concur with the analysis by the European Commission, but we stress the importance of linking the problem of youth unemployment to the current devastating situation caused by the pandemic, as a consequence of which youth



unemployment will skyrocket. Given the upcoming recession, we call on the European Commission and EU-countries to urge the implementation of national Youth Guarantee Implementation Plans and to adapt them to the current situation.

## **2. How could the Youth Guarantee better support employability of young people in vulnerable situations, including those living in rural / remote areas?**

Besides improving the educational path to afford every young person access to decent and green jobs, no matter his or her background, we also strongly believe that vocational training provides for better employability. To improve vocational education the following conditions are required:

- A) Vocational preparation should already be closely linked to professional practise to raise awareness for the needs and opportunities of labour markets.
- B) A large majority of young people with fewer qualifications are less equipped in mathematics, digital technologies and in their capacity to deal with texts. Thus, basic skills in these areas should be imparted into the educational background, to empower young people in the use of innovative, green technologies.
- C) Enhancing soft skills should already be a crucial part during vocational preparation in order to create the foundation needed for vocational training. Skills that can be summarised under the term entrepreneurial skills should also be considered.<sup>9</sup>
- D) Vocational preparation is an excellent method to raise awareness and build motivation towards gaining the necessary green skills the green labour market needs.
- E) The vocational preparation phase should be limited to a clear time frame.

Given these conditions and considering the European Green Deal (EGD), we believe that the following fields of activities will be increasingly in demand in the coming years. Targeted professional preparation within the framework of the European Youth Guarantee or other programmes such as the "NEW Skills Agenda" support this development.

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<sup>9</sup> This includes: responsibility, independent learning, ability to work in a team, problem solving skills, flexibility, creativity, communication skills. These skills enable young people to develop their biography independently and self-determined.

1. EGD 2.1.2: focuses, among other things, on combating energy poverty. To specifically address households suffering from energy poverty, we suggest that young people from the same social milieu should be qualified and engaged as communal energy consultants. Their work would focus on energy and cost savings in everyday life and provide contacts to public offers (such as microcredit and grants for devices for energy generation and use). This calls for funding from public budgets. In this field there will be an increasing need of new services in the coming years. Young people should be trained to develop new service ideas related to energy saving and the support of users in sustainability-oriented performance.
2. EGD 2.1.4: Energy and resource-efficient construction and renovation also create employment opportunities in the building trade in areas for which low-threshold professional preparation is required. This could be attractive to young people from rural areas, especially if they were already frequently engaged in practical construction work, for example in family and neighbourly contexts. In addition, there is an increasing importance of construction activities that rely on regionally available, resource-saving, climate-adapting and health-promoting materials and construction methods. Examples of this are construction with straw, wood, and clay, which, particularly in rural areas, can build upon cultural traditions that have largely been lost. Appropriate vocational preparation with a close practical relevance seems promising to us. Companies should be closely involved in the programmes, particularly regarding sustainable construction. This has a motivational effect on young people and gives companies the opportunity to access and retain skilled workers.
3. EGD 2.1.5: Climate-friendly, sustainable mobility will become more and more important. Bicycles and electric micro mobility solutions should be considered as regular means of transportation, especially in urban areas. This will also significantly increase the demand for bicycle workshops and experts for electric scooters and micro mobility devices. The repair and maintenance of mobility solutions requires highly practical training due to the use made of complex but comparatively transparent technology.
4. EGD 2.1.6: ("Farm to Fork") provides for a restructuring of agriculture that supports biodiversity and prevents soil degradation due to erosion and

disturbance in the water balance. This requires a wide range of activities that go far beyond conventional agriculture as done today. Targeted vocational preparation can especially motivate young people in rural areas to be engaged in different fields, e.g. in the restoration of biodiversity-rich zones (cf. EGD, p. 16), in the creation of shelters in agricultural work (field edges, hedges etc.), the creation of wildflower meadows as habitats for insects and birds or in agroforestry (EGD, p. 16). These tasks could be financed by the EU agricultural programmes, the corresponding restructuring of which is imperative for “Farm to Fork”.

5. The climate adaptation sector, which will become increasingly important in the future, particularly in densely populated urban areas, has not been considered in the EGD so far. This calls for a wide field of professional preparation and later fields of activity, such as urban greening and maintenance, greening of buildings, rainwater management and natural techniques to cool buildings in general.
6. EGD 2.1.7 (preserving and restoring ecosystems and biodiversity): In addition to our proposals on "Farm to Fork" (point 4, above), this opens up work and career prospects in the restoration of valuable natural areas in general, but also in comprehensive and large-scale reforestation programmes in large parts of the European Union, in the protection and improvement of forest ecosystems, in preventive measures against the growing danger of forest fires, and in the renaturation of water bodies, river courses and wetlands.
7. The aforementioned situation during and after COVID-19 will encourage teleworking. Here, we have an opportunity to create new jobs in rural or remote areas. New technologies (e.g. Virtual Reality applications) provide the opportunity to experiment with innovative technologies even if the infrastructure is missing in local contexts.

### **3. How could the quality of Youth Guarantee interventions be improved further – both directly and indirectly?**

Leaving no one behind and reaching out to young people in vulnerable situations require, beside interventions like the European Youth Guarantee, an enhanced educational system with progressive pedagogies, and technical and vocational

training providing 21<sup>st</sup> century skills. Quality education and education for sustainable development are key components of innovation to help learners develop fundamental skills, knowledge, and competencies such as critical thinking, STEM,<sup>10</sup> scenario planning and collaborative decision making, and problem solving. Therefore, improving the quality of Youth Guarantee interventions also calls for transforming educational systems. There are inspiring policies across the EU, such as Scotland's youth employment strategy "Developing the Young Workforce".<sup>11</sup> This strategy brings together the education system based on learning for sustainability, employers, civil society, youth organizations and local authorities, in order to reduce youth unemployment and to promote pathways for young people to participate in current and future work opportunities.

With regard to the topic of entrepreneurship, the Welsh Youth Entrepreneurship Strategy (YES Strategy) is another inspiring policy that boosts youth entrepreneurship.<sup>12</sup> Developed through broad consultations with stakeholders, the YES Strategy is based on the vision to develop and nurture self-sufficient, entrepreneurial young people in all communities across Wales. It is addressed to young people until the age of 25, is funded by the Welsh Government and involves a wide range of local stakeholders, from youth organisations to businesses and schools or Higher Education Institutions. In terms of impact, the YES Strategy achieved a considerable change in young people's attitudes and their early-stage entrepreneurial activity.

Investigating the actual impact of previous Youth Guarantee interventions is crucial to discovering which measures were successful. Future interventions should focus primarily on such proven interventions and in any case should be monitored in detail. One approach to improve the quality of interventions could be to train providers of trainings in self-evaluation and optimisation. They should develop awareness for the function of self-evaluation and should be equipped with evaluation instruments. Basic skills for self-evaluation can significantly improve the quality of measures.

#### **4. In which ways will the civil society contribute to and support effective implementation of the reinforced Youth Guarantee?**

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<sup>10</sup> Science, Technology, Engineering and Mathematics.

<sup>11</sup> <https://www.futurepolicy.org/global/united-kingdom-scotland-developing-the-young-workforce/> (last accessed 29 May 2020).

<sup>12</sup> <https://www.futurepolicy.org/tags-sdg/8-decent-work-and-economic-growth/> (last accessed 29 May 2020).



It is important that civil society as well as tertiary education institutions recognise the value of the Youth Guarantee programme. In particular, it is desirable that young people can play a valuable role by creating a sustainable economy and society while at the same time developing their competences, gaining independence, and finding employment. Our proposal is intended to help prepare young people for jobs related to the European Green Deal, including specifically the promotion of energy saving (in industry, transport, and construction) and consequently the reduction of CO2 emissions.

The focus on climate protection and sustainability in a redesign of the European Youth Guarantee contributes to improving awareness of the importance of reducing environmental impact by changing energy consumption and transportation habits. This awareness will lead to a new sustainable and social mindset in civil society and tertiary education institutions which contributes to the successful implementation of the programme.

The sustainable redesign of the European Youth Guarantee requires new green training offers for young people and the development of innovative job profiles. The success of this measure will depend on the demand by civil society for these new offers. One of many examples are the energy rehabilitation works of buildings which have to be encouraged and which need new forms of services. These interventions should be promoted by public administrations, in order to ensure:

- the adequate training of young people who would carry out energy audits;
- the detailed study of energy audits, which must include measures to reduce energy consumption and the use of renewable energy;
- the correct implementation of the recommended measures.

For all of the above, it will be necessary to create new jobs that public administrations should promote. The Youth Guarantee is an adequate programme to achieve this task.

##### **5. What are or would be the most useful ways for the Commission to support the implementation of the reinforced Youth Guarantee?**

From our point of view, the best investment that the EU can make through its Youth Guarantee programme is the adequate training of young people to create new jobs that are in line with the European Green Deal. Regarding technical competences, there is a lack of efforts to integrate green skills and digital skills in existing

qualifications (greening of trainings). Unfortunately, traditional vocational qualifications do not necessarily require developing competences to support one's own employability, to act independently and creatively, to solve challenging situations and to deal with people in professional activities. In countries with high youth unemployment, proposals should be made for improving pre-vocational and vocational qualifications and for designing corresponding measures. These should form part of the educational system already. In addition, in many southern European and especially in Eastern European countries, the fight against youth unemployment has to be redesigned to meet and adapt to future challenges. For example, current measures tackling youth unemployment are often related to occupational fields that will no longer be relevant in a few years. Thus, it is necessary to raise awareness of the economic potential of a green recovery. Co-creative ideas and strategies should be developed and tested in interdisciplinary, international pilot projects. Together with local political and institutional partners these activities and measures should be implemented. They should be subject to participatory monitoring and evaluation and optimised continuously.

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