



Erasmus+ KA2 Knowledge Alliances project
“Greening Energy Market and Finance – GrEnFln”

AGREEMENT NUMBER: 612408
PROJECT NUMBER: 612408 – EPP-1-2019-1-EPPKA2-KA

**WP3 – D3.0 Report about the current educational offer in near field
(EU and extra-EU vision)**





Work Package (WP)	WP3- DRAFT CURRICULUM DEVELOPMENT
WP Leader	UNIBO
Deliverable Title and Number	D3.0 Report about the current educational offer in near field (EU and extra-EU vision)
Release date	16/06/2020
Version	Version 1
Dissemination Level	Public
Authors	UNIBO
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Development of a new educational path to facilitate the sustainable transition of the economy

Project description

The research project is strictly connected to the scientific part of the KA-GrEnFin originates from the analysis of the role of the energy sector in the EU2030 strategy and its need to align to the low-carbon energy transition and circular economy goals of the European Union (EU).

GrEnFin is motivated by a robust demand from the market for a new professional profile, the Sustainable Energy Expert, able to assess the risks of the sector due to the exposure to fossil fuels resources, and to identify effective strategies for decarbonization by looking at the characteristics of the green energy market and new financial instruments to finance the transition.

GrEnFin stands for greening energy by promoting the transition to renewable energy sources, thus decarbonizing the EU economy, and the instruments to finance it, accounting for risk, returns and impacts. In line with the key elements of the Innovation Union, the project has the aim of promoting high-level professionalism and employability in the green energy sector through investment in knowledge and competences.

The expected requested knowledge is extremely specialized and focused on the connection between sustainable energy and finance or better, on the support the finance, can offer to the transition to a sustainable economy. Moreover the educational programme needs to be regularly updated in order to have professionals able to face any new contingent features. The GrEnFin project aims to design an educational path and a professional module in line with the needs denounced by (HLEG, January 2018).

The second level of the needs analysis has been carried out both about the sector needs through stakeholders and students consultations and also on the current educational offer available for the Energy Sector.



STATE OF THE ART: Draft curriculum development

An analytical survey of the specific national and international programmes and the existing double degree among Partners in the Energy Finance has been realized by the Consortium.

Each partner has contributed to the research of the existing educational offer identifying Master's degree courses available for the Energy Sector.

Here the analysis describing the research carried out by each partner, who contributed to the report by checking and analysing the educational offer within their national borders.

Each partner took care of giving a vision by checking out the top Universities and main degree programmes.

Here a brief description of the Ministerial decree that establishes a define set of learning outcomes for each level of decree course, to better understand the differences between courses:

Undergraduate degree course	Provide undergraduate students with adequate knowledge of general scientific principles and mastery of methods as well as specific professional skills
I level Master	Provide specialisation and continuing education in specific fields.
Second degree course Corso di Laurea Specialistica	Provide graduate students with advanced education and training for highly qualified professions in specific sectors
II level Master	Provide a higher level of specialisation and continuing education in specific fields.
Specialisation course	Provide knowledge and skills for specific professions. Set up exclusively on the basis of specific national laws or EU directives (medical specialisations, secondary school teacher education, legal professions)
Doctoral course	Provide postgraduates with training (including study periods abroad and training periods at public or private research bodies) for highly specialised research at universities as well as in the public and private sector

Degree	Credits	Length of Degree Course
I Level Master	60 credits in addition to those acquired for the Laurea	Minimum 1 year



II Level Master	60 credits in addition to those acquired for the Laurea Specialistica	Minimum 1 year
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Postgraduate education can involve studying for qualifications such as postgraduate certificates and postgraduate diplomas. They are sometimes used as steps on the route to a degree, as part of the training for a specific career, or as a qualification in an area of study too narrow to warrant a full degree course. As a result of mapping the existing educational offer in the Energy Market and Finance fields, UNIBO has identified two different macro groups:

- **I and II level Masters**
- **Executive MBA and postgraduate courses**

Post graduates courses are offered mainly by Business School and they are mostly private and most of them are short specialization programs (like twelve months only) and they cannot be able to educate the figure that represents the “Sustainable energy expert” with the competences that we have figured out.

These two groups cannot be compared in some way to the Joint Master Degree we have in mind:

- Either because of different degree levels (most of them are undergraduate course);
- Either because they are short specialization programs that cannot provide a comprehensive 360° education to provide our sustainable energy expert (with the skills we have planned before).

The most interesting comparison is with the **II level Masters** because it is the same type of structure that we would like to design.

Since we would like to give birth to a new professional figure, the course must be post-graduate (and not undergraduate) and must have at least **120 credits** to be able to give a complete and comprehensive education to this professional figure.

From the analysis performed by all partners involved, it is possible to identify different kind of path focused on three different tracks:

- **Technological Track in Energy-Sustainability**

These courses includes:

- **Engineering**
- **Renewable energy and energy efficiency**
- **Sustainable Energy**

Degree offered mainly by polytechnic schools belongs to different countries.



They are essentially engineering paths that have the title focused on energy but there are focusing only on the technological track (ex. 2 years, Engineering Degree between under graduation and master).

➤ **Technological track and the management area**

There are several paths that are offered by universities as a specialization of engineering path that combine the technological area and the area management. These are mainly focused on **renewable energy and management** (Engineering degree).

➤ **Technological track and the economic area**

These courses that combine **Economics for the environment and sustainability** that are offered by different Universities as a specialization of the economic field, so they are Economics degree.

We have achieved that the majority of specialized courses (especially in Italy) regarding the theme of **Green/Sustainable Economy** are purely humanistic paths or linked to degrees focused on economics and management.

In any case the **Quantitative Finance** dedicated to the operations of hedging of the natural risk in order to facilitate the transition of the market to the a green economy , does not appear in any current educational offer.

Overall, there are no courses, master's degrees based on a balanced mix of the 3 tracks we had identified:

- **Scientific/Technological Track**
- **Risk and Finance Track**
- **Social Welfare-Policy and Economic Track**

It's also clear that the current educational offer consists simply in economics, management or engineering degree that have elective courses in some topics of environments and sustainability but at the same time the skills of quantitative finance are not considered and are not included in the study plan.

For this reason, we believe it is necessary to create a course that contains these characteristics, designing an innovative and interdisciplinary approach and a framework to educate the "hero of the green economy", our "Sustainable Energy Expert" , having the pivotal role to assure for a vital economy with an environment-preserving behaviour of companies.

For this reason, our figure will learn how to combine a multidisciplinary system perspective with skills in modern environmental and energy engineering.



The methodology of our research was precisely to ask and involve each partner in the check of their national educational offer (of course we have taken into account only some of the many existing courses, those that could be more comparable for theme and typology).

Below you can find a collection of the information gathered by the partners regarding the available Academic offers in their respective countries.

For the Italian pathway we took into account only the courses that they could have a good balance of engineering, green energy, economics and finance.

ITALY

- **ENVIRONMENTAL AND SUSTAINABLE ENGINEERING (LM-35)** - Alma Mater Studiorum University of Bologna
- **MEM - Master in Energy Management** - Politecnico di Milano (School of Management)
- **GLOBAL ENERGY MANAGEMENT: MAJOR OF THE MASTER IN INTERNATIONAL MANAGEMENT** - LUISS
- **MaGER - Master in Green Management, Energy and Corporate Social Responsibility** - BOCCONI
- **ECONOMICS FOR THE ENVIRONMENT AND SUSTAINABILITY' (LM -56)** - UNIVERSITA' DI SIENA
- **ENVIROMENT AND DEVELOPMENT ECONOMICS (LM- 56)** - UNIVERSITA' DI ROMA TRE
- **MBA GREEN ENERGY AND SUSTAINABLE BUSINESSES** - BBS (Bologna Business School)

In Italy the Universities and Business Schools (mostly private) offer to graduates specialization first level- programs or short postgraduate programmes in some areas of interest related to the Green energy and Sustainability.

However, the majority of specialized courses regarding the theme of Green and Sustainable economy are purely humanistic or related to the economics and management issue, related to Human, Social Sciences and Cultural Heritage.

Further, there are no courses based on a balanced mixed of Economics, Management and Engineering degrees that include elective modules in the subjects of Environment and Sustainability. Despite the existence of many engineering and economics degrees , a proper interdisciplinary mix cannot be identified.



Lastly we point out that none of the existing educational programs are focused on Green Energy Market and Financing in an integrated way, meaning to lead a deep quantitative knowledge of the way to favor the transformation of the energy market in full compliance with the environment.

The three existing Degree Classes that we have identified are:

- **LM 16 – FINANCE**
- **LM 28 - ELECTRICAL ENGINEERING**
- **LM 56 - ECONOMICS SCIENCE**

They should be mixed together to get the course we imagined, in order to obtain a proper balance of knowledge.

GERMANY

- 1) **Master Renewable Energy Engineering and Management (REM)** – Albert - Ludwigs-Universität Freiburg
- 2) **Master Sustainability Economics and Management (SEM)** - Carl von Ossietzky University Oldenburg
- 3) **Master in Management & Technology** - Technical University of Munich, Grand École des Hautes Études Commerciales Paris
- 4) **Master Sustainability Economics and Management (SEM)** - ESCP Business Schools of Berlin and Paris (private schools)

For the German educational offer, I will describe one by one the study opportunity (**2 years - 4 semesters**).

1) Master Renewable Energy Engineering and Management (REM) - Albert-Ludwigs-Universität Freiburg

This study program is designed to close the strategic gap between the technical aspects of renewable energy and the policy drivers for sustainable development. Due to this goal the study program has basically two focuses. On the one hand the students get a deep knowledge about the technical and engineering aspects of technologies in the field of renewable energies. However, students are educated in management and planning and what is completely missing are some lectures in finance.



2) Sustainability Economics and Management - Carl von Ossietzky University Oldenburg

This study program is designed to educate executives with professional, interdisciplinary, analytic and social skills to face the challenges related to ecological and social problems. This Master is basically a course in economics with focus on sustainability because most of the lectures are based on the economics's fields. There are also lectures in management which can be complemented by other fields depending on the student's interests. However, there are no lectures in the field of finance and risk management and only one lecture about the engineering background of renewable energies.

3) Master in Management & Technology - Technical University of Munich, Grand École des Hautes Études Commerciales Paris

The programme is meant to give a high level education in management as well as profound skills in engineering or natural sciences, linking engineering or natural science and management. This Master has its two focuses equally split on specialization in management and technologies. The interesting feature is that you choose a specific part of engineering and study only this, e.g., mechanical, electronical, computer, chemistry engineering. This master allows to specialize in management on "Finance & Accounting". However, compared to the idea of our program the focus is less on renewable energies and then only in a very specific field of engineering.

4) Master Sustainability Economics and Management (SEM) - ESCP Business Schools of Berlin and Paris (private schools)

The main goals of this Master are to better understand sustainability and to push global rethinking on sustainable management and business models. The focus of this Master is really on management and economics applied to the field of sustainability, but not on finance. Compared to the future GrEnFln programme the engineering component is not considered.

We can therefore argue that in general, the German educational offer is more managerial than the financial mark, which we would like to create for the future path of our Sustainable Energy Expert.

GREECE

- **MSc in Energy and Finance - International Hellenic University (IHU)/ School of Science & Technology, Thessaloniki – Greece (14 month over 3 terms (full time) or 26 months (part time))**
- **MBA Oil, Gas and Energy Management - University of Nicosia, School of Business, Departments of Marketing, Management and MIS, Economics and Finance, Accounting, Hospitality Tourism and Sports Management, Nicosia – Cyprus (18 months over 3 semesters)**



- MSc in Environmental Management and Sustainability - International Hellenic University (IHU)/ School of Science & Technology, Thessaloniki – Greece (14-month over 3 terms (full-time) or 26-month (part-time))
- MSc Law and Economics in Energy Markets - Athens University of Economics & Business (AUEB), School of Economics Sciences, Department of International and European Economic studies, Athens – Greece (12 months over 3 terms (full time) or 24 months (part time))
- MSc in Energy Systems - International Hellenic University (IHU)/ School of Science & Technology, Thessaloniki – Greece (14-month over 3 terms (full-time) or 26-month (part-time))
- MBA Energy and Environmental Investments - University of West Attica/School of engineering/School of Mechanical Engineering, Athens – Greece (4 semesters)
- MSc in Energy: Strategy, Law & Economics - University of Piraeus, Department of International & European Studies, Piraeus – Greece (12-month over 2 semesters (full-time) or 18-month (part-time))

The courses offered by Greece are all Total ECTS less than 120, and also the duration is always less than 2 years. The only course that UNIBO has decided to analyse in a deep way (because it come closer to the idea of educational course we imagined) is as follows:

Energy and finance course :

The MSc in Energy and Finance is a carefully-structured **interdisciplinary graduate programme** and aims to provide postgraduate level education in the fields of energy and finance and is targeted towards University graduates and professionals with the following academic backgrounds: Business/Economics, Engineering, Geotechnical as well as Natural Sciences, who wish to acquire specialized knowledge in these fields.

The MSc in Energy and Finance delivers to its participants all these skills that are essential for managerial, advisory and academic positions in the financial and the energy sector.

The graduates of the programme will develop the ability to execute in depth research, to critically evaluate and to synthesize their own ideas, on the frequently encountered energy-related financial issues. At the same time, great emphasis is placed on the practical aspects of all topics covered by the programme, examining real-world problems using data analysis in the energy and financial industry.

The IHU was Greece's first public university where programmes were taught exclusively in English. However It comprised of the School of Humanities, Social Sciences and Economics and the School of Science and Technology. At present these 3 Schools of the IHU belong to the University Center of International Programmes of Studies (UCIPS) of the International Hellenic University offering programs that are taught exclusively in English. As a state university, all degrees awarded are accredited by the Government and are recognized in the European Union and internationally.



POLAND

- Ecological Energy Sources - **AGH University of Science and Technology (100 ects)**
- Renewable Energy and Energy Management - **AGH University of Science and Technology (2 YEARS = 120 ects)**
- Renewable energy sources and municipal infrastructure - **Tadeusz Kościuszko University of Technology (1YEAR)**

- Double degree Master Studies in EN - AGH: University of Science and Technology & SUT: Silesian University of Technology
- Master Studies EN - SGGW - Warsaw University of Life Sciences
- Master Studies EN - Warsaw University of Technology
- Master Studies EN - Poznań University of Life Sciences
- Master Studies Rzeszów University of Technology
- Master Studies Rzeszów University of Technology
- Master Studies Rzeszów University of Technology
- Master Studies University of Rzeszów
- Master Studies Wrocław University of Environmental and Life Sciences
- Master Studies West Pomeranian University of Technology in Szczecin
- Master Studies University of Warmia and Mazury in Olsztyn
- Master Studies Universitas Opoliensis
- Master Studies AGH: University of Science and Technology
- Master Studies AGH: University of Science and Technology
- Master Studies Poznań University of Life Sciences

Master Studies (part time) WSEiZ - University of Ecology and Management

Master Studies (part time) WSB University

Postgraduate studies SGH - Warsaw School of Economics

Postgraduate studies UE Wroclaw in cooperation with Institute for Renewable Energy

Generally in Poland the Master courses (related to the Energy fields) are offered mainly by Polytechnics or Universities of Life Sciences (focused on Agro etc.). In Poland the engineering studies lasts at least 7 semesters (Bachelor), the master studies in Polish language last 3 semesters (90 ECTS). The consequence is that there is no Master studies in Polish that offer similar Master programme of 120 ECTS.

The situation is different when English taught Master studies are taken into account. To be comparable to external path they all offer (4 schools, 4 first rows in) 4 semester courses (120 ECTS).





They offer also some topics in finance but it is not their main path – those offered by polytechnics are mainly focused on technical aspects, 2 offered by university of life sciences are focused on eco and human approach. However, let student choose an interesting path but not so unified as we plan for the financial and quantitative finance theme. The best one was offered by UE Wroclaw in cooperation with Institute for Renewable Energy (last row, not offered now).

All post-graduate studies were offered in Polish language, so they could not be considered for an international Degree.

To sum up the Polish situation, the only 120 ECTS English taught Master studies are offered by polytechnics and 2 universities of life sciences. One programme especially – the EIT InnoEnergy (<https://www.innoenergy.com/>) - offer a nice range of different choices as follows:

Economics and Energy Markets, 6
Project Risk Evaluation and Management, 4.5
Economics, 6
Fundamentals of Operations Research, 4.5
Marketing Management, 6
Commercial and Strategic Management, 6
Natural and Technological Risks, 4.5

PORTUGAL

- Double Degree - Engineering and Industrial Management - Universidade da Beira Interior
- Joint Degree - Mechanical Engineering Universidade de Aveiro
- Joint Degree - Environmental Engineering - Universidade de Aveiro
- Joint Degree - Engineering and Industrial Management - Universidade de Aveiro
- Joint Degree - Chemistry Engineer - Universidade de Aveiro
- Joint Degree - Mechanical Engineering - Universidade de Coimbra
- Joint Degree - Chemistry Engineer - Universidade de Coimbra
- Double Degree - Energy for sustainability - Universidade de Coimbra
- Double Degree - Solar Energy Engineering - Universidade de Évora
- Joint Degree - Mechanical Engineering - Universidade de Lisboa
- Joint Degree - Chemistry Engineer - Universidade de Lisboa
- Joint Degree - Environmental Engineering - Universidade de Lisboa



- Double Degree - Energy Engineering and Management - Universidade de Lisboa
- Double Degree - Mechanical Engineering - Universidade de Trás-os-Montes e Alto Douro
- Joint Degree - Engineering and Industrial Management - Universidade do Minho
- Joint Degree - Mechanical Engineering - Universidade do Minho
- Joint Degree - Engineering and Industrial Management - Universidade do Porto
- Joint Degree - Mechanical Engineering - Universidade do Porto
- Joint Degree - Chemistry Engineer - Universidade do Porto
- Joint Degree - Environmental Engineering - Universidade do Porto
- Joint Degree - Engineering and Industrial Management - Universidade Nova de Lisboa
- Joint Degree - Mechanical Engineering - Universidade Nova de Lisboa
- Joint Degree - Environmental Engineering - Universidade Nova de Lisboa
- Joint Degree - Engineering and Industrial Management - Universidade Nova de Lisboa
- Joint Degree - Environmental Engineering - Universidade Nova de Lisboa
- Joint Degree - Chemistry Engineer - Universidade Nova de Lisboa
- Double Degree - Renewable Energy Engineering - Universidade Nova de Lisboa –
Instituto Politécnico de Setúbal
- Double Degree - Renewable Energies and Energy Efficiency - Instituto Politécnico de
Bragança
- Double Degree - Chemistry Engineer - Instituto Politécnico de Bragança
- Double Degree - Quality and Environmental Engineering - Instituto Politécnico de Lisboa
- Double Degree - Mechanical Engineering - Instituto Politécnico de Lisboa
- Double Degree - Chemical and biological Engineer - Instituto Politécnico de Lisboa
- Double Degree - Sustainable Energies - Instituto Politécnico do Porto
- Double Degree - Mechanical Engineering - Instituto Politécnico do Porto
- Double Degree - Mathematics Applied to Engineering and Finance - Instituto Politécnico
do Porto
- Double Degree - Electrical Engineering - Energy and Industrial Automation - Instituto
Politécnico de Viseu
- Double Degree ISCTE - Environment and Sustainability Studies - Instituto Universitário
de Lisboa





- Double Degree - Mechanical Engineering - Energy, Air Conditioning and Refrigeration - Universidade do Algarve

We can see that the most of the educational offer in Portugal energy field is relating to the engineering degree. There are degree courses that are 5 years school in order to have a first and a second level degree. There are also the double degree courses that are 2 school years (120 ECT) and the PhD that are 2 years (at least).

Nevertheless, there is no master that have the right mix of energy, engineering, climate change and financial topics. They are mostly engineering courses (and non-financial theme) or they are mostly mathematics (and non-energy topics).

The only two courses that are more similar to the course we want to create are the followings (especially the second mentioned):

- 1) **Energy for sustainability, from Universidade de Coimbra – Faculdade de Ciências e Tecnologia:** This training program aims to graduate Masters with an interdisciplinary training aimed at the efficient use of energy, for the production of energy, centralized and decentralized, as well as for the distribution of energy, in a perspective of sustainable development, with skills in the relevant technological domains and in energy economics and the environment. (but it is only 90 ECTS).

- 2) **Mathematics Applied to Engineering and Finance, from Instituto Politécnico do Porto – Instituto Superior do Porto**

This course is intended to specialize professionals in the treatment of technological, scientific and financial management problems through their formulation and mathematical modeling, the mathematical study of the model, the interpretation and verification of the solution, culminating in an accessible results presentation and in the study of the implementation of solutions found.

The main problem of this degree is that is taught entirely in Portuguese and not in English language.

This is the reason why our course should be created allowing English speaking students to attend.

SPAIN

To help us in the research, here the link for the list of the best Master's Degrees in Energy in Spain:

<https://www.masterstudies.com/Masters-Degree/Energy/Spain/>



- European Master in Sustainable Energy System Management – Double degree (3 semesters)
- **Master's In Environomical Pathways for Sustainable Energy Systems – Double Degree (2 years)**

The course offered by Master's in Sustainable Systems is where you can learn how to make a real contribution to minimising the environmental impact of current and future energy systems. When joining this winning programme in category, Energy and Natural Resources in Western Europe students learn to address societal challenges with technical solutions. The programme also explores the part played by innovation and commerce, giving students an understanding of the role and responsibility of engineers in a more sustainable energy industry.

- **Masters in renewable energy and energy sustainability**

UNIBA Centro Universitario Internacional de Barcelona

We consider only the Master in Renewable Energy and Energy Sustainability. It's true that it offers many career opportunities, because graduates can work in any enterprise, public institution or organization linked to any of the studied renewable energies: Solar energy, Wind, Hydroelectric, Biomass, Geothermal, Control operations, Energy saving and efficiency and International, national or regional energy and environmental policies.

In any case, most of the Spanish masters are focused on Energy Engineering and Energy Management and there's absence of courses which include Finance and Green Energy.

ENGLAND

- Economics and Policy of Energy and the Environment MSc - UCL - University College London (1 year)
- Sustainable Energy MSC - University of Glasgow (1 year)
- Energy and Environmental Technology and Economics MSc - City University of London (1 year)
- MSc Global Energy and Climate Policy - Soas University of London (The programme may be taken in one year (full time) or in two or three years part time)
- MSc in
- Energy Management - ESCP Business School (9 months of on-campus, full-time studies plus 9 months of professional development)



- Energy Policy MSc - University of Sussex Business School (1 year full time, 2 years part time)
- Sustainable Energy Engineering MSc - University of Nottingham (1 YEAR)
- Renewable Energy MSc - Cranfield University (One year full-time, two-three years part-time)
- **MPhil in Engineering for Sustainable Development - University of Cambridge**
- MSc in Environmental Change and Management - University of Oxford

Among the most relevant for the project, in the UK, the Global Sustainability Institute in Cambridge (GSI) leads on a Sustainability Master, providing classes on systems-based approach to addressing sustainability, epistemology of sustainability, the impact of economic growth on ecosystems and limited natural resources, and sustainable behavioral change¹.

As another proposal, Oxford University, one of the most important in UK, offers short sustainability courses and summer schools focusing on the analysis of the economic and financial implications of carbon stranded assets².

However, England offers shorter courses, 1 year instead of 2 with 120 ects, it is more focused on engineering, management and economics, but finance and energy is not explored as in the idea of GrEnFin Project.

As a follow up to the courses regarding the current academic offers in the United Kingdom, we want to stress to points:

The full-time masters in the UK have duration of 1 year, in contrast to the GrEnFin plan of creating a 2 years - 120 ects course.

The vast majority of the masters are focused on Energy Engineering, Energy Management and Economics. Courses that touch upon Energy and Finance seem to be lacking, giving GrEnFin the possibility to have its own place in the space of the academic offers.

The MSc of Oxford aims to give a broad appreciation of the major processes of environmental change and of the people and institutions involved in environmental management. The course seeks to produce environmental leaders who are interdisciplinary and analytical in their approach to environmental issues, as we would like our path to be, and competent and aware decision makers.

AUSTRIA

Overall in Austria there are 28 master classes focusing to different extents to environmental sustainability, and mostly provided by Fachhochschule (FH):

¹ <https://www.anglia.ac.uk/study/postgraduate/sustainability>

² <http://www.smithschool.ox.ac.uk/courses/sffc/>



Considering the focus of GrEnFin, we can narrow down the selection to 9 master classes that cover the topics of economy/finance/environment from different point of views (engineering, biology, ecology, social sciences, economics), in 6 universities (considering both public and private universities). Overall, the educational offer lacks classes in sustainable finance, climate economics and policy, and green energy markets and finance.

1 University of Graz

➤ Environmental System Sciences – Climate Change and Environmental Technology

Research-oriented education focusing on the analysis and assessment of environmentally relevant physical and chemical parameters as well as on the sustainable design of technological processes within the framework of European and global regulations in connection with data analysis and modelling on the basis of system sciences. In addition, various options are open for in-depth study: Climate and Climate Change (Physics / Wegener Center), Environmental Cycles in Hydro and Lithosphere (Geosciences) and Environmental and Energy Technology (Chemistry, Process Engineering).

Gaps: climate economics and climate policies, financial risk, sustainable finance, green energy investments

➤ Environmental Systems Sciences - Sustainability Management

Socio-economic focus: deepens students' knowledge of business administration and systems sciences as well as their interdisciplinary knowledge and skills. The programme focuses on issues relating to sustainability and innovation management, business and corporate environmental management and environmental economics. This programme includes systems sciences, especially methods of systems integration, assessment and modeling for sustainable development, reduction of hazards and improvement of living conditions in the man-environment system.

Gaps: climate economics and climate policies, financial risk, sustainable finance, green energy investments.

➤ Environmental Systems Sciences - Economics

Economics focus: deepens students' knowledge of economics and systems sciences as well as their interdisciplinary knowledge and skills. In particular, students acquire knowledge of theories of environmental economics and resource economics, discussing topics ranging from global change, climate change and politics, and the connection between technical and economical progress, sustainability and resource economics, to environment and foreign trade. Furthermore, students acquire methodical knowledge of applied environmental economics (quantitative analytical tools for processing empirical questions on environmental and climate policies).

Gaps: financial risk, sustainable finance, green energy investments



2 University of Vienna

Interdisciplinary programme focuses on the analysis of fundamental environmental processes using know-how from a wide range of scientific fields. The Master's programme deals with the scientific principles underlying the relationship between humans and the environment, focusing on system analysis. For this purpose, students acquire extensive skills in the relevant fields of natural sciences, in particular earth sciences and biology.

Gaps: climate economics, climate policy, financial risk, sustainable finance, green energy investments

3 Vienna University of Economics and Business

Socio-Ecological Economics and Policy (SEEP)

Focus: knowledge and skills to critically analyse the combined social-ecological and economic crises facing humanity today. Policy approaches and the diversity of alternatives are explored with respect to issues such as climate change, social-ecological transformation, sustainable work, inequalities, growthmania and consumerism. foundation courses in the first semester provide coverage of contemporary global policy challenges; the history and philosophy of science; institutions, governance, law and international policy; economic growth and development. In the second semester two specialisations are chosen along with the methods course and an agent level behavioural socio-economics course.

Gaps: climate economics, financial risk, sustainable finance, green energy investments

4. Modul University

Sustainable Development, Management, and Policy

Focus on Principles of Sustainability and Economic Development, Environmental Sciences, Systems and Energy Studies, Public Policy Analysis and Evaluation, Ecological Economics, Applications of Economics for the Environment, Sustainability Metrics Seminar, Measuring and Assessing Sustainability, environmental management and sustainability.

Gaps: climate economics, financial risk, sustainable finance, green energy investments

5. BOKU University

➤ Sustainability in Agriculture, Food Production and Food Technology in the Danube Region

Focus: intercultural and regional aspects of sustainable agriculture and food technology is crucial in finding viable patzways to long-term succes in Central and Eastern European agriculture. Intercultural and social aspects, anthropic landscape and natural resources of sustainability in agriculture and the food industry in the Danube region.



International Joint Master program implemented as a joint degree offered by the University of Natural Resources and Life Sciences, Vienna (Austria) and Szent István University (SZIE), Gödöllő (Hungary) with contributions (courses, MSc thesis supervision, summer schools...) from the following partner universities: Corvinus University Budapest (HU), CULS Prague (CZ), WULS (PL), University of Zagreb (HR), University of Novi Sad (SR), Slovak Agricultural University Nitra (SK) USAMVBT Timisoara (RO). Graduates receive a Joint Master Degree in Sustainability in Agriculture, Food production and Food technology from BOKU and SZIE.

Gaps: climate economics, climate policy, financial risk, sustainable finance, green energy investments

➤ **Natural Resources Management and Ecological Engineering**

Focus on sustainable management, agro-municipal resources management, ecological engineering and risk management, nature conservation and biodiversity management, global resources and sustainability management, human dimension and socio-economic aspects of sustainable development. It is jointly offered by University of Natural Resources and Life Sciences, Vienna (BOKU) Austria, Czech University of Life Sciences (CULS), Czech Republic

Lincoln University (LU), New Zealand

Gaps: climate economics, climate policy, financial risk, sustainable finance, green energy investments

6. **Krems University**

Focus: provide expertise for specialist businesses in the environmental sector. It is also aimed at training generalists who can work in a range of fields and put down markers for sustainability in their respective industries.

Classes in the economy and society (interplay between environmental, business and social considerations, social, economic and political frameworks in place), management systems and standards, technologies (renewable energy and waste management), communication and research methods that promote sustainable business.

Gaps: climate economics, financial risk, sustainable finance, green energy investments

The Institute for Ecological Economics at WU (Wien) , one of our partner, is among the few academic institutions to offer a truly interdisciplinary international Master in Socio-Ecological Economics and Policy (SEEP) that provides a theoretical background and factual information about the interconnected dynamics of economic and social systems and the physical environment, environmental science and policies.

However, an interdisciplinary HE course covering cultivating the skills needed by energy business experts and young professionals by covering topics in renewable energy transition policies in the EU, climate-related



financial risks, quantitative energy finance, renewable energy project management from a theoretical, empirical and applied point of view is yet to be developed.

FRANCE

The below website displays a list of Masters Programs in Sustainability Studies in France 2020, that will help us to understand the general framework on the Green fields:

<https://www.masterstudies.com/Masters-Degree/Sustainability-Studies/France/>

In particular, we have identified the following courses:

Master Degree in Energy, finance, carbon: Paris Dauphine

The course Energy, Finance, Carbon (EFC) of the Master in Economy and Finance responds to current developments in the energy sector and the new needs of industrial and institutional actors. Training young economists able to give an operational character to the industrial and economic strategies of the main players in the world of energy and environment that must manage the energy of tomorrow and henceforth to respond to energy issues, financial and carbon.

This path focuses on the energy challenges of the future, allowing students to acquire solid knowledge and skills in economics and energy finance, as well as to deepen their knowledge in the field of the environment.

Energy Environment: Science Technology and Management (STEEM) Graduate Degree (YEAR1)

At École Polytechnique, this course emphasize excellence in the applied sciences while providing a complete understanding of industrial, economic and social context.

The Energy Environment: Science Technology and Management (STEEM) Graduate Degree offers a real-world technical expertise on environmental issues and renewable energy sources, along with an in-depth understanding of the economic, social and geopolitical challenges to their development.

Master in Environmental Sustainability Law and Policies (2 years)

The Master in Environmental Sustainability Law and Policies is taught in English and covers a total of four semesters across two years. Within the next decade, the UAE is poised to dedicate its focus towards socio-economic sustainability. The curriculum at Sorbonne University Abu Dhabi will be crucial in creating and encouraging a new generation passionate about global business initiatives to complement the country's rapid and ambitious progress.

This course is based on socioeconomic and political incentives in business, finance and administration.



Sorbonne Abu Dhabi's students develop detailed analytical skills to scrutinise the environmental impact of global business and socio-economic forces.

They are also encouraged to actively participate in projects and workshops, and maintain constant dialogue with faculty and regional or international experts to explore the most effective strategies to respond to various sustainability challenges in the UAE, GCC and on the international level. Throughout this degree programme, future leaders in environmental sustainability have the opportunity to maximise their skills and career potential to complement the UAE's rapid and ambitious progress.

MSc in Sustainable Finance

The aim of the MSc is to train professionals with a perfect understanding of financial tools and both the financial and extra-financial expertise are key as careers in finance evolve.

Come explore finance from a different angle with well trained, expert faculty members and a network of strong partners to facilitate job placement. Here, you will learn how to finance new economic and social challenges in a sustainable manner.

With this MSc, students bring a real added value to your career: they have access to a wide range of opportunities in both the traditional trades and the new professions inherent in E.S.G issues.

Enrolling in the MSc in Sustainable Finance program means learning about finance as it is today and as it will be tomorrow through a differentiated, innovative approach.

Master's degree in Engineering and Environmental Management (IGE)

The program is organized in teaching modules, 4 main modules for all students, plus 3 additional modules for full-time students.

The main modules allow all students to acquire the fundamental knowledge and skills for a future transition manager; Complementary modules allow full-time students to apply this knowledge and skills through specific projects, while alternating students have their business as a testing ground.

Overall, we can say that nowadays around hundred Masters are offered in the field all over the world, most of them are located in Europe.

The data explain the interest in the Energy market especially in Europe. Nevertheless, 55% of these Masters are proposed by independent educational bodies with courses that are not always devoted to renewable energy sources. These involve technical experts and teachers coming from Universities but are not provided directly by Academic Institutions.

On the other hand, the remaining 45% of the offer comes from local Universities, i.e. without any international feature, nor cooperation with other countries (as, for example, Double or Joint Degrees) and the faculty is



quite completely composed by the staff of the same institutions (<http://www.masterstudies.com/Masters-Degree/Energy-Management/Europe/>).

Moreover, there are no Erasmus Mundus Programmes in the Energy field (<https://eacea.ec.europa.eu/erasmus-plus/library/scholarships-catalogue-en>).

Most of the educational offer on sustainability is located in USA, and focuses on a rather broad concept of sustainability, in terms of natural resource use, consumer behavior or policy, and mostly from an academic point of view.

In the USA, Boston University (Boston) offers a Minor in Sustainable Energy for undergraduate students, that provides basic elements of energy sources from the business, economics, policy and engineering perspectives³.

On the other hand, Harvard University has developed the Future of Energy initiative, which engages faculty and students in research on major energy-related problems e.g. climate change, urban air pollution, energy security, from an academic perspective⁴.

³ <http://www.bu.edu/earth/education/undergraduate/minors/minor-in-sustainable-energy/>

⁴ <http://energy.harvard.edu/>



Extra UE existing educational offer

UNIBO, in addition to having analysed the Italian educational opportunity in the energy and finance field, has also mapped the offer of extra-European top universities. Firstly, UNIBO has looked into the best Sustainable and Renewable Energy Colleges in the United States⁵.

Sustainable and renewable energy is a growing field of study with an important future because we conventional energy sources are not infinite. Research on utilization of renewable energy including solar, wind, and biofuel has been booming across the United States over the past few years. Educational institutions have also been quick to pick up on this need for qualified people to work in the renewable energy sector, and today there are several learning programs related to the field being offered by colleges all over the country.

Here you'll find the list of courses that are close to what the GrEnFin project aims to create, but anyway all programmes deal with finance in optional courses and they don't have such in-depth quantitative education.

UNIVERSITY OF CALIFORNIA, BERKELEY (BERKELEY, CA)

The Bachelor of Arts in Sustainable Environmental Design at Berkeley University, one of the oldest of the ten University of California schools, is offered through the College of Environmental Design.

This is an interdisciplinary, culturally relevant program that prepares students to face the sustainability challenges not only of urban California, but also on a more globally minded level. Through expert teaching students will gain the understanding of urban technologies and design strategies, be able to evaluate the current state and future potential of an area or situation, and then apply physical, biological, and social science in the design of sustainable cities.

Additionally available as a minor, some of the class requirements of the program include Critical Debates in Sustainable Urbanism, Geographic Information Systems, and Environmental Design for Sustainable Development. The final Capstone workshop before graduation expects students to apply classroom theories to real scenarios, working in conjunction with an external client organization. Students must complete a total of **120 units** before graduation.

University of California—Berkeley : Energy and Resources Group

This program at the University of California at Berkeley offers graduate degree programs in energy and resources in general with a gap in finance theme.

PENN- STATE WORLD CAMPUS (UNIVERSITY PARK, PA)

⁵ <https://www.thesolardigest.com/top-10-colleges-with-solar-and-renewable-energy-programs/>



The **Bachelor of Arts degree in Energy and Sustainability Policy** is an online program through Penn State World Campus and has the reputation of being as dynamic and beneficial as any on-campus class.

The comprehensive curriculum, designed by an advisory board of energy industry experts and Penn State faculty members, requires a total of **120 credits** for graduation.

The credit break-down includes 68 for the major, 24 for the Bachelor of Arts, 45 for general education (25 of which are included in the requirements for the major), and eight for electives. Major course topics include Energy Conservation for Environmental Protection, Oil: International Revolution, Energy and Sustainability in Contemporary Culture, and Human Dimensions of Global Warming. The Sloan Consortium recognized the Bachelor of Arts in Energy and Sustainability Policy as the Outstanding Online Program in 2012.

There is also a **Master of Professional Studies in Renewable Energy & Sustainability Systems at Penn.**

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (CAMBRIDGE, MA)

MIT is a leader in innovation and technological advancement studies in the United States. Under the Energy Initiative at MIT, the **Energy Studies** minor is an interdisciplinary program that studies energy across energy sciences, technology, and social sciences. This program is ideal for students who are interested in learning about energy without needing a major in the subject. Students will study courses within three core curriculum subjects: Science Foundations, Social Science Foundations, and Technology/Engineering in Context.

In addition to this minor program in energy, MIT offers **the Energy Undergraduate Research Opportunities Program (UROP)**. This is a full-time summer research program, which is 40 hours per week for 10 to 12 weeks. This is open to all students of any major.

In this case, too, these courses are undergraduate and the quantitative finance addressed to the hedging of the natural risk involved in the sustainable transition doesn't appear in the educational offer.

HARVARD UNIVERSITY

HARVARD ENERGY & ENVIRONMENTAL PROGRAMS

The Harvard University Center for the Environment (HUCE) encourages research and education about the environment and its many interactions with human society.

Through a variety of grants and fellowships, the Center supports research related to the environment at every level. By sponsoring symposia, public lectures, and informal student convocations, the Center connects people with an interest in the environment. **HUCE does not grant degrees.**

The Harvard Environmental Economics Program develops innovative answers to today's complex environmental issues, by providing a venue to bring together faculty and graduate students from across the



University engaged in research, teaching, and outreach in environmental and natural resource economics and related public policy.

BOSTON UNIVERSITY

The Center for Energy and Environmental Studies within Boston University offers **undergraduate and graduate degree programs** in energy and environmental studies without emphasizing the theme of finance.



Best MBA in Energy Programs



In addition to master's degree courses, UNIBO was able to find MBA programs⁶ that either focus on the energy industry as a whole or focus on energy management, renewable energy and clean technology.

That includes not just engineers and technicians but also business people and managers. As we are well aware, the increased demand for energy experts should mean an increased demand for executives with a deep understanding of the energy business and solid management skills.

UNIBO is firmly convinced on the role of finance: the important role of the financial knowledge is found to be essential to realize the sustainable diversification of energy's supply thanks to a natural risk control policy and hedging.

A large number of universities are creating energy-focused bachelor's degree, master's degree, and energy MBA programs. The energy tracks and specializations at business schools take many forms.

There are programs that focus on the energy industry as a whole, while others focus on energy management, renewable energy, or clean technology. Some energy MBA programs include core and elective courses delivered through the university's science and engineering schools, tipping the curricular balance toward math and engineering. It's important to remember, however, that an MBA is a business degree, and so no matter how deeply a program dives into energy delivery as a science, there will still be coursework in:

- **Finance**

⁶ <https://www.noodle.com/articles/the-11-best-mba-in-energy-programs-and-what-sets-each-business-school-apart>



- **Management**
- **Economics**
- **Accounting**
- **Marketing**

UNIBO stressed the point related to the important role of the financial knowledge.

Some students choose dual MBA/MS degrees that provide opportunities to study both the business of energy and the science of energy.

Many energy MBA programs can be completed in two years of full-time study (there are also flexible online MBA and part-time programs that take two to three years to complete, along with some accelerated programs that take less than a year to complete).

The International Energy Agency estimates that the world's energy consumption will increase by nearly 30% by 2040, compared to rates in 2015. In order to accommodate this extraordinary growth, investments – as well as innovation – will need to continue pumping into the energy industry. If you want to be on the cutting edge of a booming industry, getting an MBA to kick-start students career in energy sector may be a perfect fit.

For years, the oil and gas industry has been one of the most lucrative in the world. Though the sector faced hurdles post-recession, it has seen growth in recent years and offers lots of opportunities for MBA grads.

The right MBA experience can also prepare future expert for a career in sustainability and renewables.

We have analyzed six schools – five of which are located in the U.S. and one in Canada⁷. Some of the schools on our list sent as many as 16% of their recent grads into the energy sector. Most also offer robust concentrations in clean tech, natural resource management, and other related subjects:

- THE BEST FULL-TIME MBA PROGRAMS FOR A CAREER IN ENERGY
- THE MBA ROADS LESS TRAVELED: PROGRAMS TO CONSIDER
- HEAD TO HEAD – RICE BUSINESS MBA vs. TEXAS A&M MAYS MBA vs. ALBERTA MBA vs. TEXAS MBA vs. DUKE FUQUA MBA vs. BERKELEY HAAS MBA
- BEHIND THE RANKINGS FOR ENERGY MBAs

⁷ <https://touchmba.com/top-mba-programs-energy/>



THE BEST FULL-TIME MBA PROGRAMS FOR A CAREER IN ENERGY



RICE
JONES GRADUATE
SCHOOL OF BUSINESS

Rice University, Jones Graduate School of Business (Rice Business)

Houston, Texas, United States

Energy in the Classroom

Through the energy concentration, MBA students can choose from an extensive range of electives such as “Geopolitics of Energy” and “Pricing Strategies for the Oil & Gas Industry.”



MAYS BUSINESS SCHOOL
TEXAS A&M UNIVERSITY

Texas A&M University, Mays Business School (Mays)

College Station, Texas, United States

What Mays lacks in academic offerings, it makes up for in career placement. Though the MBA program doesn't offer a concentration or dual-degree in energy, it sent 13% of its recent grads into the sector. The Texas A&M Energy Institute can also be an invaluable resource to b-school students who are interested in an interdisciplinary learning experience. Being located in the heart of Texas puts Mays MBAs in an ideal location to network with oil and gas companies, too.

Energy in the Classroom

The Texas A&M Energy Institute is home to both the Master of Science in Energy and Certificate in Energy programs. Unfortunately, b-school students can't pursue either degree in tandem with their MBAs. That being said, the institute – which connects more than 20 departments and 240 faculty members across two branch campuses – can be an invaluable resource for MBA candidates.



University of Alberta, Alberta School of Business (Alberta)

Edmonton, Alberta, Canada

The MBA program offers a concentration in Natural Resources, Energy, and Environment that offers extensive career development and co-curricular opportunities for students. The school also offers a Sustainability concentration for MBAs interested in cleantech and renewables.

Energy in the Classroom

Students in the Natural Resources, Energy, and Environment MBA concentration can work closely with the Centre for Applied Business Research in Energy and the Environment. The Sustainability concentration offers energy-related courses including “Natural Resource and Environmental Law,” “Environmental Management,” and “Innovation & Sustainability – The Cleantech Revolution.”

THE UNIVERSITY OF TEXAS AT AUSTIN



The University of Texas at Austin, McCombs School of Business (Texas) – Touch MBA Interview

Austin, Texas, United States

MBAs can study sustainability through the CleanTech concentration and by working on projects through the renowned Clean Energy Incubator. The university conducts more clean energy research than any other school in the world. Despite its reputation in the cleantech sector, the b-school’s industry employment numbers aren’t as strong as some others on our list.

Energy in the Classroom

Through the CleanTech MBA concentration, students can take courses like “Wind Energy” and “Energy Technology & Policy.” The track takes an interdisciplinary approach by offering classes in law, finance, and



public policy.

The MBA program also offers an Energy Finance concentration.

Students interested in an interdisciplinary learning experience or more research-based approach can participate in the Graduate Portfolio Program in Energy Studies or the Graduate Portfolio Program in Sustainability.



Duke University, Fuqua School of Business (Fuqua) – Touch MBA Interview

Durham, North Carolina, United States

Fuqua's MBA program offers academic and co-curricular activities for those interested in both cleantech and petroleum. The b-school has two concentrations in the field and a dual-degree with the Nicholas School of the Environment. Fuqua is also located in North Carolina's "Research Triangle," so it neighbors other world-class research universities and organizations.

Energy in the Classroom

Fuqua offers MBA concentrations in Energy and Environment, and Energy Finance. Course offerings range from "Energy, Markets, & Innovation" to "Renewables and the World's Poor." It can be considered as MBA-Master of Environmental Management.



The University of California Berkeley, Haas School of Business (Berkeley Haas)



Berkeley, California, United States

With Berkeley Haas's strong reputation in social impact and sustainability, it's no surprise that the b-school is a great fit for cleantech-minded students. The program offers a concentration in Energy and Clean Technology. MBAs can also attend events and activities through the Berkeley Energy & Resources Collaborative, as well as the Energy Institute at Haas.

Energy in the Classroom

The Energy and Clean Technology concentration prepares students for a career in renewables and sustainability through dynamic classes. In the interdisciplinary "Cleantech to Market" course, MBAs work with graduate students from other departments to craft a market research report. Here are some other b-schools to consider:

- **The University of Oklahoma, Price College of Business:** Price offers an Executive MBA in Energy that takes place mostly online. The b-school's full-time program also offers a certificate in energy and a dual-program with Bachelor's of Science in Petroleum Engineering. Though Price is located in the middle of America, students can gain valuable international experience by studying abroad at the Institute of French Petroleum.
- **The University of Aberdeen:** Aberdeen offers a specialized MBA in Energy Management. It's also located in the "Energy Capital of Europe," which earned its title because of large petroleum reserves discovered in the area in the mid-1900s.
- **University of Calgary, Haskayne School of Business:** Haskayne offers several energy-related degrees, including a Global Energy Executive MBA, a full-time MBA with a specialization in Global Energy Management and Sustainable Development, and a Master's of Science in Sustainable Energy Development.

Here below, I will simply list the names of universities and the corresponding website link:

AMERICA

- University of Cumbria: MBA Energy and Sustainability
<https://www.postgraduatesearch.com/university-of-cumbria/55839518/postgraduate-course.htm>
- Energy and Engineering AMERICAN UNIVERSITY (WASHINGTON, DC)
<https://www.american.edu/finance/facilities/energy-and-engineering.cfm>
- Boston University - Institute for sustainable Energy: Energy & Environmental Sustainability MBA Concentration
<https://www.bu.edu/ise/sustainable-energy-academic-offerings-at-bu/energy-environmental-sustainability-mba-concentration/>
- Berkeley Energy Resources Collaborative and the Energy Institute at Haas: MBA Energy and Clean Technology
<https://mba.haas.berkeley.edu/careers/clean-tech>



- Monash University: Master of Environment and Sustainability - Climate Risk and the Financial System
<https://www.monash.edu/sustainable-development/capabilities/climateworks-australia/climate-risk-and-the-financial-system>
- Penn State (US): Master of Professional Studies in Renewable Energy and Sustainability Systems
<https://www.worldcampus.psu.edu/degrees-and-certificates/renewable-energy-and-sustainability-systems/overview>
- Columbia University: energy and environment (non è una laurea)
<https://sipa.columbia.edu/academics/concentrations/energy-and-environment>
- University of Texas at Austin, McCombs School of Business: MBA students are Energy Finance and CleanTech
<https://www.mcombs.utexas.edu/MBA/Full-Time/Curriculum>
- Rawls College of Business MBA Energy Project Evaluation and Finance
<https://find-mba.com/schools/usa/texas/ut-austin-mcombs>
- University of Colorado Boulder :Masters of the Environment (MENV) Graduate degree with Environmental Studies
<https://www.colorado.edu/rasei/education/renewable-and-sustainable-energy-education-cu-boulder>

AUSTRALIA

- The University of Melbourne : Master of Energy Systems
<https://study.unimelb.edu.au/find/courses/graduate/master-of-energy-systems/>
- University of Queensland: Postgraduate Coursework - Master of Sustainable Energy
<https://future-students.uq.edu.au/study/programs/master-sustainable-energy-5684>
- RMIT UNIVERSITY: Master of Engineering (Sustainable Energy)
<https://www.rmit.edu.au/study-with-us/levels-of-study/postgraduate-study/masters-by-coursework/master-of-engineering-sustainable-energy-mc229>
- Murdoch University: Master of Renewable and Sustainable Energy (MRenSusEn):
[https://www.murdoch.edu.au/study/courses/course-details/master-of-renewable-and-sustainable-energy-\(mrensusen\)#](https://www.murdoch.edu.au/study/courses/course-details/master-of-renewable-and-sustainable-energy-(mrensusen)#)

CHINA

- China University of Petroleum-Beijing : MSc (dual degree) Energy Finance
<https://www.dundee.ac.uk/postgraduate/energy-finance-china-university-petroleum-beijing>



Next steps and conclusions

At last we point out that none of the existing educational programmes are focused on Green Energy Market and Financing in an integrated way meaning to lead a deep quantitative knowledge of the way to favor the transformation of the energy market in full compliance with the environment.

The aim of our Project is to train future figure who can contribute to a societal transition towards this end. Our future Sustainable Energy Expert will learn how to combine a multidisciplinary system perspective with skills in modern environmental and energy engineering. UNIBO stresses the importance of this proactive and holistic approach, in order to limit or prevent significantly the environmental problems.

We have analysed and searched scrupulously, that the subject of energy resources is very sensitive all over the world and there are thousands of courses with related topics, but no degree course with such a strong predominance of quantitative skills in risk management and financial engineering. We believe the interdisciplinary approach which includes the financial track be undeniable to educate the Sustainable Energy Expert.

As a first output of this report we could say the GrEnFln project is innovative because it doesn't already exist. This innovation clarified by the need analysis we are dealing with has been coupled with the stakeholders' survey whose request are exactly in line to the discussed gap in education. Our aim is to fill in the gap. Future steps within the WP3 are focused on understand what are the constraints and rules of each nation in order to create an educational path according to the legislation of each Institutions, trying to carry on the development of the Academic curriculum and Professional module. The feasibility check will be followed by the accreditation of the master course.

Greening Energy Market and Finance



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



University
of Economics
in Katowice



JESUS FERREIRA
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energy consulting



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