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Introductory video to Renewable Energy for Local Development

Photovoltaic online course (Module 2)

Videoscript

Hello everyone,

My name is Jose Segarra, I am the technical director of Heliotec. Since 2000 I have been working on several regional, national and European projects related to sustainability and mainly photovoltaic systems. In fact, I have founded several companies related to the green economy and renewable energies. One of the most important is HELIOTEC.

Heliotec is based on renewable energy sector project management, by providing technical innovation and engineering. In the field of photovoltaic, we have completed work on more than 50 projects, not only in Spain, but also in Romania and Latin America.

Well, in the second module of this course, solar energy and photovoltaic technologies are the focus point.

Photovoltaic can be a major technology to get a new energy model in the future. It is a mature technology, and its flexibility and modularity means small investors and companies can become new energy producers. This is the way to get a new distributed energy model.

The course starts with 3 theorical modules. The First: Technical Aspects, Second Economical Aspects, and third Environmental and Social Aspects.

The second part of the course is more practical, Chapter 4 demonstrates a case study through the learnt methodology. Finally, the last chapter presents 10 case studies, offering you the possibility to choose one of them for your study.

I hope you enjoy the classes and find them useful for your future. Now my colleague, Zsuzsanna Kray, will present each chapter in detail to you.

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Hello everyone,

I am Zsuzsanna Kray I collaborate with Heliotec as an environmental researcher and teacher. In the past years I participated in several European projects, mainly focusing on environmental awareness raising and sustainability education. My goal is to work for a lower carbon world through dissemination, showing the best practices locally and encouraging people around me to participate actively in climate change mitigation and adaptation.

As Jose Segarra mentioned in the introduction, the module two is about the photovoltaic systems.

In Chapter 1 the aim is to understand the technical basics of solar radiation, different kinds of solar panels, and the factors that influence the efficiency of the technology. At the end of the chapter you will have the possibility to get familiar with some calculation and designing. For example: what are the energy needs of an isolated village, consequently, which size of photovoltaic systems they need to install onsite?

The Chapter 2 is about the economical background of photovoltaic technology. We will estimate the costs of different installations and understand the evolution of the prices on the market. Also, as an entrepreneur, we need to know the operational costs of the installed system. How much does it cost the maintenance? How much time and workforce shall we considerate as a photovoltaic system operator? Is the whole system profitable?

Chapter 3 looks at the same question from environmental and social point of view. Firstly, we need to understand the sources of emissions during the production, transportation and operation of solar panels. Secondly, learn about Life Cycle Assessment, including the end-of-life waste management of the photovoltaic systems. This mindset requires an ecological, holistic approach: we analyze the impact on the Earth as a global system. In this chapter we discuss the photovoltaic systems' impact on rural development. What opportunities reside in individual energy producing? And finally, what is the importance of education in the future scenarios?

To summarize all the above mentioned aspects, we elaborated a case study as per the described methodology. Through the project called Mar de Fulles, we introduce an isolated, eco-ethical hotel in a natural parc, located in Castellón, Spain. Have you got an idea, how much the payback time is of such an investment? The Chapter 4 will give you the answer and also provides you an elaborated example in order to give you a hand for the case study you will work out at the end of the renewable energy course.

Thus, the mentioned list of case studies appears in the chapter 5. Note that examples are also from Spain as from Hungary and you are free to choose any of them. It is important to know, that the cases sometimes contain imaginary data, so you are supposed to do the calculations with the given data instead of doing deep library or internet research.

I wish you a successful work the photovoltaic module, as well as with the whole in2rural course,
Good luck
and hopefully see in person one day!