

# Certified Expert in Climate & Renewable Energy Finance



## Course Overview

The Paris Agreement marks the beginning of a new era with the focus shifting from finding a consensus on the common goals to realizing jointly agreed goals. “Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development” (Article 2 c of the Paris Agreement) will require a significant increase in funding – with new instruments and approaches required to mobilize a broad range of investors and to achieve scalability in financing climate action. Financing the global energy transition will be one key building block.

Decreasing prices for renewables combined with increasing regulatory risk for traditional fossil fuels make Renewable Energy (RE) more competitive and attractive for commercial investors.

Climate Change is high on the agenda of governments across the world. The structural change of the global energy system is already under way with annual investment in power generation based on renewables at almost the same level as investment in power based on fossil fuels.

### Unit 1: Introduction

Unit 1 provides an introduction to basic concepts of climate change science such as weather, climate, the greenhouse effect, main causes and elements of anthropogenic (human caused) climate change. To prevent dangerous climate change, not only individual climate protection measures are required. This unit discusses challenges and opportunities for economies due to climate change from an economic perspective and the dynamic interplay of climate politics, business and finance. Following, the state-of-the-art of climate policy and what do these goals imply for concrete acting are presented. The section concludes with a discussion about the increasing urgency to act now!

### Unit 2: Overview on Climate Finance

The term “Climate Finance” has not been clearly defined so far and there is no common understanding about the financing flows which should be included or not. The term has been used in a narrow sense to refer to transfers of public resources from developed to developing countries, in light of their UN Climate Convention obligations to provide "new and additional financial resources," and in a wider sense to refer to all financial flows relating to climate mitigation and adaptation.

Financing renewable energy projects is a crucial but not the only element of climate finance. Unit 2 focuses on a description of financing needs in climate change in the area of mitigation and adaptation across sectors, financing sources and instruments. It shows the relevance of RE in terms of scale and contribution to climate finance and will discuss the role of climate risk assessment in the mainstream business.

### Unit 3: Basics of Finance and Investment

Unit 3 introduces the basics of finance and investment for assessing the financial viability of investments into climate or renewable energy projects. The unit informs on the basics of looking at business models, introduces key indicators such as NPV, IRR and WACC and provides the basics of capital structures including debt and equity instruments.

### Unit 4: The Role of Regulation and Support Frameworks

While levelized costs of electricity from many renewable energy technologies have decreased significantly over the past years, financial viability still requires some level of public sector intervention in many applications. Unit 4 explains why markets alone might fundamentally not be able to trigger renewable energy investment in a way necessary to mitigate climate change and which barriers can prevent renewable energy investments.

The unit will also familiarize you with typical support mechanisms available across different countries that can be used to overcome barriers the way they work and their effects on the financial viability. We will also introduce the role of donors and the instruments they can use to address (in particular financial) barriers to renewable energy investments.

### **Unit 5: Business Models for Renewable Energy**

There is a broad range of business models across RE technologies and across different countries. This module unit will introduce the most relevant business models for large-scale centralized such as a multi-megawatt wind park and small-scale decentralized renewable energy projects such as a community-based mini-grid PV plant. This unit will help you understand the different business model parameters according to project scale and e.g. revenue models, ownership structure and value proposition and will link to the financing perspective.

### **Unit 6: Technical Knowledge on RE Technologies and Electricity Markets**

Unit 6 introduces the physical basics of energy, some basics of the functioning of electricity markets and the basics of renewable energy based electricity generation technologies. This understanding is crucial to properly assess key technology risks that can substantially influence a renewable energy project's financial viability.

### **Unit 7: The Universe of Climate and RE Investors**

Different investors and intermediaries have very different investment strategies, level of risk appetite, return expectations and investment horizon. Crowding in the right investor for a project is essential to ensure their long term involvement and the required scale up of investment volumes. Unit 7 will familiarize you with different types of investors and financial intermediaries and improve your understanding of their decision-making criteria and process.

### **Unit 8: Financing Structures, Financial Instruments and Donor Interventions for RE Projects**

Unit 8 is about project finance structures and donor intervention for supporting renewable energy development. You will be familiarized with the private sector investors' and commercial lenders' perspective on the different risks and barriers a project faces and at what stage of the project these risks occur. We will also introduce you to the different financing structures and the key differences between corporate and project finance.

### **Unit 9: Applying Knowledge in Practice: Financial Modelling**

Building on your knowledge gained in the previous units, unit 9 will teach you how to build a simple financial model for a renewable energy project in EXCEL. With the help of our experts you will project operating and investing cash flows and derive a possible financing structure. Once we have built this model you will also learn how to calculate key ratios and how to perform a sensitivity analysis.

### **Unit 10: Excursus – Financing for Energy Efficiency**

Energy efficiency plays a crucial role in climate change mitigation. Massive energy efficiency potential exists in the residential sector but also in the commercial/industrial sector and transportation. Often, required investments are relatively small and are paid back in relatively short timeframes. Therefore, energy efficiency projects are often characterized as the "low hanging fruits". This Excursus will introduce existing and innovative financing structures for the dominating energy efficiency opportunities.