Hanze

# Course: Energy Policy, Markets, Finance and Law — credits: 5

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| **Course code** | SUVM23MFL |
| **Name** | Energy Policy, Markets, Finance and Law |
| **Study year** | 2026-2027 |
| **ECTS credits** | 5 |
| **Language** | English |
| **Coordinator** | B.V. ter Veer |
| **Modes of delivery** | Teaching method 1 |
| **Assessments** | Energy Policy, Markets, Finance and Law - Assignment |

**Learning outcomes**

**Objective of the module:**

After completion of this module the student is able to:

1. Understand how energy markets function and what types of market failures can occur.
2. Analyse the way energy markets could be regulated, using insights from micro-economics, finance, and international economics
3. Understand academic papers on the design of regulation of energy markets and how the effects of regulation could be evaluated.
4. Analyse potential business cases, by choosing and applying the correct scientific models (e.g. NCW, DCF, IRR, and WACC) and apply scenario analysis, sensitivity analysis and ratio analysis on the scientific models.
5. Evaluate the monetary value of Capex, Opex and revenues by collecting, assessing and analysing relevant data.
6. Analyse and advise on financing requirements (e.g. divided policy) based on predictions about the exploitation and cash flows.
7. Evaluate a financing proposal after considering various possible forms of financing, taking into account the requirements of potential capital providers.
8. Understand the functioning of different legal systems and apply different ways of finding legal documentation such as case law or legislation.
9. Analyse different developments in the energy markets from a legal perspective and identify legal bottlenecks.

**Content**

**Energy Markets, Policies and Regulation (40 % content)**

This module will provide the students with a thorough understanding of the functioning of energy markets, the underlying processes and stakeholder behaviour, and how energy markets interact with their policy, technology and societal context. The module will teach the student about the economic mechanisms that makes the various parts of the energy system to be aligned together. The module will discuss the concepts of liberalisation, regulation, restructuring and privatisation. Specific items to be addressed are: characteristics, role and functioning of different types of electricity and gas wholesale markets (forward, day-ahead, intraday and balancing markets), as well as energy retail markets. This module will also pay attention to the interaction between energy markets and environmental policies, such as the EU Emission Trading System (ETS) and policies to foster the supply by renewable energy sources, for instance by subsidies or green certificates Finally, the module will discuss the potential role of different technologies, as storage and power-to-gas, to deal with the impact of the growing supply from intermittent renewable energy sources on the stability of energy networks and markets.

**Energy Finance (40% content)**

The ‘Finance’ module is about the understanding that the innovations that are needed to realize the energy transition requires understanding of finance and how financial variables interplay with technical variables. Each of these financial variables may be closely related to technical variables, for instance the payback time of the project (the time needed to recover the investment) which is related to the total technical project costs, but also to energy prices and the costs of using the (existing) infrastructure. Investment opportunities are compared and assessed based on their expected capex and opex. Risk assessment and sensitivity analysis are also part of investment decisions.
In this module, the students will learn how to apply different valuation methods to evaluate an investment project. The main aim of the module is to acquire hand-on experience in this area. In this module, we will use basic finance knowledge / methods, such as NPV, DCF, IRR, and WACC. The students learn to use these methods and to perform sensitivity analysis and ratio analysis considering alternatives and dependencies.
This module aims at understanding and applying the basic finance concepts and furthermore the students can identify valuation issues by collecting and assessing relevant data, analyse the relevant data and using this to develop a valuation model.

**Energy Law (20% content)**

After the introductory course in the first course (introduction to law) students understand the functioning of different legal systems and are able to identify different legal disciplines. From this point, this course continues by explaining how law is used as an instrument to regulate the markets. The first class will go more in depth on the developments in the European gas market and how national markets were liberalized. In achieving one internal market, national markets needed to be liberalized. There are also legal challenges with regard to the upcoming market for (green) hydrogen and the (missing) legal

framework. The second class will be on the electricity market, the role of aggregators and energy communities. In this class some legal aspects with regard to wind energy, smart grids, smart metering will be discussed. The last class will go in more depth on the legal challenges a DSO is facing in this changing energy market and regulated area.

| **Included in programme(s)** | **School(s)** |
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| European Master in Sustainable Energy System Management | Engineering, Life Sciences & ICT |

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