UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Regulatory Aspects of Modern Energy

2627-2-F7603Q011-F7603Q01103

Aims

The 2-credit module gives students, including those with no legal background, the legal and regulatory framework of energy and renewable energy sources at three levels: international, European Union and Italian, with a focus on solar photovoltaic, wind and hydropower. It explains who makes the rules, what those rules require, and how they shape the building and operation of generation and storage plants.

The topics of the module are closely linked to the technology modules of the course; students are invited to consult the syllabus of the entire course for its general objectives.

By the end of the module students will be able to:
1. Knowledge and understanding. Describe the three levels of energy law, their main legal acts and the institutions that adopt and enforce them; explain the legal meaning of key concepts such as climate neutrality, nationally determined contribution, binding target, renewables acceleration area, suitable area, single authorisation, concession and support scheme.
2. Applying knowledge and understanding. Identify, for a given solar, wind or hydropower project in Italy, the applicable authorisation regime, the competent authorities and the main environmental and landscape constraints.
3. Making judgements. Assess how a legal or regulatory choice (a target, a permitting rule, the design of an incentive) affects investment decisions, timing and risk.
4. Communication skills. Present a regulatory issue orally in English, using correct basic legal terminology.
5. Learning skills. Find and read primary sources independently on EUR-Lex, Normattiva and the websites of ARERA, GSE and the UNFCCC, and keep up with legislative change.

Contents

• Energy law and regulation: concepts, sources and actors.
• The international climate and energy framework: UNFCCC, Kyoto Protocol, Paris Agreement, COPs.

• EU energy and climate law: competences, internal market, Green Deal, Emissions Trading System.
• EU renewable energy law: targets, permitting, support schemes, market design.
• The Italian framework: constitution, institutions, market and planning.
• Authorisation regimes for renewable plants, environmental assessment and landscape protection.
• Siting of plants and the rules for solar, wind and hydropower.
• Support schemes, grid, storage and renewable energy communities.

Detailed program

Lecture 1
Energy law and regulation: concepts, sources and actors. Why energy is regulated: network monopolies, externalities, security of supply, public service; the energy trilemma; the electricity chain in legal terms; the hierarchy of sources; the actors; the legal definition of renewable energy; the regulatory toolbox; how to find and read a legal text.

Lecture 2
The international climate and energy framework. From Stockholm 1972 to Rio 1992; the UN Framework Convention on Climate Change; the Kyoto Protocol; the Paris Agreement (temperature goal, NDCs, global stocktake, Article 6); the legal nature of the obligations; recent COPs, from Glasgow to Belém and Antalya; the ICJ Advisory Opinion of 23 July 2025 and the ECtHR judgment in KlimaSeniorinnen; IEA, IRENA, SDG 7 and the Energy Charter Treaty.

Lecture 3
EU energy and climate law. ECSC and Euratom; Article 194 TFEU and the division of competences; the principle of energy solidarity; the liberalisation packages and the 2024 electricity market reform; the 2022 crisis and REPowerEU; the Green Deal and the European Climate Law (?55% by 2030, ?90% by 2040, neutrality by 2050); the ETS, ETS2 and CBAM; the Governance Regulation and national energy and climate plans; energy efficiency; State aid.

Lecture 4
EU renewable energy law. The three Renewable Energy Directives (2009, 2018, 2023); the 42.5% target and sector targets; permitting: mapping, acceleration areas, maximum time limits, overriding public interest; coordination with the EIA, Habitats, Birds and Water Directives; support schemes and two-way contracts for difference; case law of the Court of Justice (PreussenElektra, Ålands Vindkraft, Anie); PPAs and guarantees of origin; self-consumers and energy communities; the Net-Zero Industry Act; Italian transposition.

Lecture 5
The Italian framework: constitution, institutions, market and planning. Articles 9, 41, 117 and 118 of the Constitution; Constitutional Court case law on regional limits to renewables and the principle of maximum diffusion; from the 1962 nationalisation to Legislative Decree 79/1999; MASE, ARERA, Terna, GSE, GME, Regions, Soprintendenze; PNIEC, PNRR and regional targets; from Legislative Decree 387/2003 to Legislative Decree 190/2024; basics of administrative procedure (Law 241/1990), services conference and judicial review.

Lecture 6
Authorising renewable plants. The consolidated act on renewable permits (Legislative Decree 190/2024): public utility and overriding public interest; free activity, simplified procedure (PAS) and single authorisation; thresholds by technology; screening, EIA, PAUR and appropriate assessment; landscape authorisation and the role of the Soprintendenza; services conference and Article 14-quinquies; land availability, expropriation and connection; time limits and remedies against delay; repowering and decommissioning.

Lecture 7
Where plants can be built: solar, wind and hydropower. From unsuitable to suitable areas (Decree-Law 175/2025)

and acceleration areas; the ban on ground-mounted solar on agricultural land and agrivoltaics; onshore and offshore wind; hydropower: public water domain, Royal Decree 1775/1933, large derivations and Article 12 of Legislative Decree 79/1999; ecological flow and pumped storage; the three technologies compared.

**Lecture 8 **
Support schemes, grid, storage and energy communities; review. From CIP 6 and the Conto Energia to FER 1, FER 2 and FER X; stability of support and legitimate expectations; GSE controls (Article 42 of Legislative Decree 28/2011); grid connection, the electricity market, curtailment, PPAs and guarantees of origin; storage and MACSE auctions; renewable energy communities and collective self-consumption

Prerequisites

• No previous specific legal knowledge is required;
• Knowledge of English sufficient to follow lectures and texts in English

Teaching form

• 8 two-hour lectures in English, with delivered didactics (2 credits), by presenting slides;
• the last part of each lecture is devoted to questions, discussion and exercises on practical cases and legal texts;
• legal terms are always explained in plain language and, where useful, the Italian term is given next to the English one

Textbook and teaching resource

• Lecture slides, published on the e-learning website of the course after each lecture: they are the main study material and are sufficient for the exam.

For an in-depth analysis of the energetic matter, it could be useful to read:
• R. J. Heffron, Energy Law: An Introduction, 2nd ed., Springer, 2021;
• K. Talus, Introduction to EU Energy Law, Oxford University Press, 2016;
• E. Picozza, S. M. Sambri (eds.), Il diritto dell'energia, Cedam, 2015 (for Italian-speaking students)

Texts other than the slides are recommended for further study and are not mandatory.

Semester

First semester, academic year 2026/2027

Assessment method

The module has no mid-term tests and no separate exam. Assessment takes place within the single final oral exam of the whole course Renewable Energy Sources: From Technologies to Applications, graded from 18/30 to 30/30 cum laude.

For the part concerning this module, the interview is held in English and covers the topics taught in class, with reference to the three levels of the module (international, European Union, Italian).

The exam program is the one presented in the slides; no distinction is made between attending and non-attending students.

The assessment of the legal part contributes to the final grade of the course as set out in the course syllabus, and takes into account the following criteria:

1. conceptual knowledge and understanding of legal concepts and sources;
2. ability to apply knowledge and understanding to practical cases, connecting the different legal levels;
3. communication and argumentation skills, including correct use of basic legal terminology in English;
4. learning, self-assessment and self-regulation skills.

Office hours

At the end of each lecture and, at any other time, by appointment arranged by e-mail, also online via Microsoft Teams.

Sustainable Development Goals

QUALITY EDUCATION | AFFORDABLE AND CLEAN ENERGY | INDUSTRY, INNOVATION AND INFRASTRUCTURE | SUSTAINABLE CITIES AND COMMUNITIES | RESPONSIBLE CONSUMPTION AND PRODUCTION