Energy Policy MSc (online)

Modules

The course is comprised of twelve 15-credit taught modules.

Introduction to Energy Policy
15 credits
This introductory module will provide students with an overview of the nature and core themes of energy policy, with a particular focus on the challenges associated with the decarbonisation of energy systems. The module sets out the interdisciplinary nature of the MSC course by drawing upon ideas from a range of social sciences, in particular innovation studies, economics and policy studies.

Policy Analysis
15 credits
This module will provide students with the concepts and tools to understand and analyse specific energy policy problems, identify relevant goals, develop evaluation criteria, identify alternative policy options, assess the likely impact of those options against the evaluation criteria and provide practical policy recommendations. The approach will be interdisciplinary and applied, drawing in particular upon ideas from welfare economics and public choice theory. Students will apply these ideas to contemporary challenges within energy and climate policy.

Understanding the Policy Process
15 credits
This module will introduce students to the nature and operation of the policy process in modern societies. The module will examine the different stages of the policy process and assess competing explanations of that process, drawing upon ideas from policy studies and political science. The aim is to provide students with an understanding of how political systems are organised in different countries, how problems are constructed and brought onto the policy agenda, how policies are formulated, adopted, implemented and evaluated, how and why changes in policy occur, and how policy processes at different levels of government interrelate. Particular attention will be paid to international cooperation between nation states and the nature, operation and importance of the institutional arrangements that result (e.g. the UNFCC and the Paris agreement). These ideas will be illustrated with practical examples and exercises from energy and other areas.
Science, Technology and Innovation
15 credits
This module will introduce students to the tradition of social science research on science, technology and innovation (STI). The aim is to provide students with grounding in a variety of economic and non-economic (systems) perspectives on STI and the application of these to societal challenges such as energy and sustainability. The module will give students from diverse disciplinary backgrounds a shared language, set of concepts and understanding of STI, thereby enabling them to communicate with each other and with the wider industrial, academic and policy communities concerned with innovation.

Energy Sustainability
15 credits
This module will explore the challenge of moving rapidly to low-carbon energy systems while at the same time meeting broader policy objectives. Substantive issues to be covered in the module include: energy market structure and liberalisation; the economics of energy efficiency; equity and fuel poverty; carbon taxes and emissions trading; transforming electricity systems and markets; innovation policy and support for renewable energy; the role of nuclear power, decarbonising transport systems; competing perspectives on energy security; and the role of carbon capture and storage. The module will adopt an interdisciplinary approach, drawing in particular upon orthodox and behavioural economics and innovation studies.

Energy Justice
15 credits
This module will investigate a central question: how can justice theory help people make meaningful decisions about the production, the delivery, the use, and the effects of energy? In asking this question, the module will connect the discussion of energy and technology with long-standing notions of virtue, utility, happiness, welfare, freedom, distributive justice and procedural justice. To give pragmatic structure to this inquiry (and to show why this question matters), the module is divided into four parts: (1) understanding the global energy system and the injustices currently associated with it; (2) exploring justice theory and what it can offer when applied to energy problems; (3) examining policy mechanisms and tools that promote energy justice; and (4) analysing case studies around the world of where communities or countries have made remarkable gains promoting energy justice.

Perspectives, Methods & Skills
15 credits
This module will train students to become critical users of research and savvy producers and analysts of data. It will provide an introduction to the basics of research design, and to a range of qualitative and quantitative research methods in social science. The module aims to be relevant to those interested in pursuing research careers, as well as those who intend to critically apply research results as part of their professional activities.
Quantitative Research Methods for Energy Policy
15 credits
This module will equip students with: (1) knowledge and understanding of basic concepts in statistics and quantitative analysis; and (2) practical skills to conduct and interpret commonly used statistical methods. The module will introduce commonly used methods such as factor analysis and regression, with the help of practical exercises using SPSS.

Governing Energy Transitions
15 credits
The module will introduce students to a systems perspective on long-term, socio-technical change in the field of energy in order to explore the co-evolution of technologies with political, institutional, economic and social factors. The module will explore historical and current examples of energy transitions and discuss their implications for governing transitions to low carbon energy systems.

Energy and Development
15 credits
This module will introduce students to the energy policy challenges faced by developing countries as they seek to achieve their development objectives whilst establishing sustainable, low carbon and socially-just energy systems. Integrating orthodox perspectives on energy policy with insights from innovation studies and socio-technical approaches, students will critically engage with academic and policy debates on development strategies – such as low-carbon development and technology transfer – and policy instruments such as emissions trading and the Technology Mechanism of the UN Climate Agreement.

Energy and Economic Growth
15 credits
This module will investigate the challenge of reconciling economic growth with sustainable energy use. Drawing on perspectives from evolutionary and ecological economics, the module will explore the role of key energy supply and conversion technologies in driving past surges of economic growth, and the dependence of economic activity on efficient conversion of primary energy sources into useful work. It will then assess the implications of these insights for the potential for a new surge of economic growth based on investment in low carbon energy technologies.
Innovation for Sustainability
15 credits
This module will explore the role that innovation can play in sustainable development in industrialised and developing countries. A number of ideas will be used to provide a framework for experiential learning, including: include past and current theory on sustainability, growth and competitiveness (with specific reference to the role of technology); understanding and influencing directions of innovation – both in terms of green industrialisation and grassroots innovation; and the governance of socio-technical transitions. Specific topics will be explored to illustrate the utility of each idea, such as: the barriers to the diffusion of sustainable innovations; the role of innovative green niches in systems transformations; and the challenges of international co-ordination and regulation within the multilateral trading system. These topics will be illustrated with reference to real world case studies in a number of different sectors.