

## Policy Lessons: The Use of Economics in Climate Policy

1.5 ECTS

TERM 3

MANDATORY

### Professor

Prof. Thomas Stoerk ([t.a.stoerk@lse.ac.uk](mailto:t.a.stoerk@lse.ac.uk), <https://tstoerk.net>).

### Prerequisites to enroll

Students should have a keen interest in both economics and climate policy. This course presupposes a basic understanding of climate science, a basic knowledge of international climate policy and – most importantly - the curiosity to move from the drawing board towards influencing political choices made in the real world.

### Overview and objectives

Economists largely agree that the pricing of greenhouse gas emissions is crucial for effective climate policy. However, most countries across the world have yet to impose significant constraints on greenhouse gas emissions.

Nevertheless, there has been a recent shift in this trend, with key jurisdictions such as the European Union leading the way towards more ambitious climate policies. The goal of achieving climate neutrality by 2050 is now within reach.

How did we get to this point, and what role has economics played in shaping climate policy?

This course will focus on two major jurisdictions, the European Union and the United States, examining the role of economics in answering two critical questions: how to set ambitious climate policy goals; and how to design effective climate policy instruments that can deliver the necessary reductions in greenhouse gas emissions.

The course draws on the professor's professional experience in climate economics in both research and policy-making in the EU and the US.

## Course outline

The tentative outline of the course is as follows:

- 1. Climate policy stringency – what role for economics?** This section will review economic estimates of climate impacts; how these have been used to inform the debate about optimal climate policy stringency; and how economics advice has differed from climate science advice on climate policy stringency.
- 2. Climate policy stringency – how to increase ambition? United States (US).** US discourse about climate policy ambition has largely been around the quantification of the damage associated with the emission of a ton of carbon dioxide: the social cost of carbon. This section will review the recent updates to the social cost of carbon and other greenhouse gases; how economics research has been used by the US administration; and how and when to apply cost of carbon numbers to decide on climate policy stringency more generally.
- 3. Climate policy stringency – how to increase ambition? European Union (EU).** This section will review the nuts and bolts of climate policy making in the EU to understand how EU climate policy in the last five years has become part of the EU's core economic policy; how the EU increased its climate policy stringency to climate neutrality by 2050; and why the net zero greenhouse gas emissions by 2050 objective has been enshrined into EU legislation to increase political commitment.
- 4. Climate policy instrument mix: the EU's *Fit for 55* package.** Deciding on climate policy stringency is the easy part: the hard part is the design and implementation of

climate policy instruments to deliver a given emissions target. In July 2021, the European Commission tabled the most ambitious climate policy package in human history: the *Fit for 55* package, which updated and strengthened all EU climate and related policy instruments to deliver an increased EU 2030 greenhouse gas emission target of at least -55% on 1990 levels by 2030. This climate policy package was adopted by the EU in December 2022, and this section will review all details.

**5. Climate policy instrument mix: what role for central banks and the financial system?** Central banks have substantial political independence to pursue a specific remit, which is often tied to inflation. This section will review how climate change has recently entered the purview of central banks; if and how central banks should complement climate policy makers by acting on climate; and how climate risk is now actively being followed as key topic across the financial system by institutions such as the International Monetary Fund.

## Required activities

Active participation in the course, and submission of written materials as per the below.

At least a cursory reading of the background readings is recommended prior to the course. Readings are, however, optional. What you read should be dictated only by your own curiosity.

## Evaluation

*Before the start of the course:* Students must send the professor a question they are personally interested in for each of the five course sections (1.-5.) above. For each of the five questions, please give a 2-3 phrase explanation as to why the question is of interest.

*After the end of the course:* By June 9<sup>th</sup> 2023 5pm Barcelona, students must submit a written essay to the professor. Essay length should be 3000 words (+/- 300 words),

and group work in groups of up to three is encouraged. Essay questions will be distributed at the beginning of the course.

## Materials

Background readings for the different sections:

### Climate policy stringency – what role for economics?

Hänsel, Martin, Moritz Drupp, Daniel Johansson, Frikk Nesje, Christian Azar, Mark Freeman, Ben Groom, and Thomas Sterner (2020): "Climate economics support for the UN climate targets", *Nature Climate Change*, **10**(8): 781-789.

### Climate policy stringency – how to increase ambition? United States (US).

Rennert, Kevin, Frank Errickson, Brian Prest, Lisa Rennels, *et al.* (2022): "Comprehensive evidence implies a higher social cost of CO<sub>2</sub>", *Nature*, **610**(7933): 687-692.

Dietz, Simon, James Rising, Thomas Stoerk and Gernot Wagner (2021): "Economic impacts of tipping points in the climate system", *Proceedings of the National Academy of Sciences*, **118**(34): e2103081118.

### Climate policy stringency – how to increase ambition? European Union (EU).

European Commission (2018): In-Depth Analysis in Support of the Commission Communication COM(2018) 773. A Clean Planet for all. A European long-term strategic vision for a prosperous, modern, competitive and climate neutral economy. [https://climate.ec.europa.eu/document/download/dc751b7f-6bff-47eb-9535-32181f35607a\\_en?filename=com\\_2018\\_733\\_analysis\\_in\\_support\\_en.pdf](https://climate.ec.europa.eu/document/download/dc751b7f-6bff-47eb-9535-32181f35607a_en?filename=com_2018_733_analysis_in_support_en.pdf)

### Climate policy instrument mix: the EU's *Fit for 55* package.

Delbeke, Jos and Peter Vis (2019): *Towards a Climate-Neutral Europe. Curbing the Trend.* [https://climate.ec.europa.eu/document/download/0bbb91e6-2fbb-4804-9401-475c71f06fc4\\_en?filename=toward\\_climate\\_neutral\\_europe\\_en.pdf](https://climate.ec.europa.eu/document/download/0bbb91e6-2fbb-4804-9401-475c71f06fc4_en?filename=toward_climate_neutral_europe_en.pdf)

## **Climate policy instrument mix: what role for central banks and the financial system?**

European Central Bank (2021 July 8): "ECB presents action plan to include climate change considerations in its monetary policy strategy" [Press Release]. [https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708\\_1~f104919225.en.html](https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1~f104919225.en.html)

Tucker, Paul (2018): *Unelected Power*, Princeton University Press.

### **Competencies**

- ☒ To work within a heterogeneous team of researchers as economic analyst using specific group techniques.
- ☒ That students are able to use their skill set in the pursuit of open enquiry, viewpoint diversity, and constructive disagreement to ensure that the best arguments prevail independent of who voices them.
- ☒ That the students be able to communicate their conclusions and the knowledge and the ultimate reasons that sustain them to both, specialized and non-specialized publics in a clear and unambiguous way.
- ☒ To identify and apply the insights of the theory, the models, and the analytical tools of modern economics to its global dimension
- ☒ To understand and apply the quantitative methods used to solve complex problems of the economy.

### **Learning outcomes**

- ☒ Applies analytical and quantitative tools to economic problems, formulating the suitable hypotheses and using the necessary tools.
- ☒ Uses evidence to solve new problems and develops an adequate analysis.