Vilnius University, Institute of International Relations and Political Science

Politics of Global Challenges BA program

Addressing Climate Change

Spring semester 2024

Wednesdays 15.00 to 16.30

Room 302

Instructor

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Overview

The course gives a broad overview of the global politics of climate change. It contextualizes the causes, consequences, political challenges, and socio-economic implications of global warming within a variety of theoretical perspectives. Specific emphasis will be placed on international institutional aspects of global climate policy, as well as on the ambiguous role of technology as either part of the problem or part of the solution.

Learning outcomes

After this course, you should:

- Understand the broad social, economic and environmental dimensions of climate change
- Understand what makes climate change an extraordinarily difficult political problem
- Understand potential solutions (and their weaknesses) for the global climate crisis

Course requirements and assessment

Active participation – 25%

Group presentation – 25%

Exam – 50%

Course structure

The course will be divided into 4 larger thematic blocks.

- The first block addresses the temporality of global climate change: its causes and consequences, the historical barriers that carbon lock-in has created for effective climate action, as well as the question of how to transition towards climate-neutral futures. This block will both give an overview of the various physical, economic and political challenges posed by global climate change; but also highlight the analytical necessity of explicitly accounting for its historical dimensions.
- The second block deals with the politics of climate policy: given the urgency of addressing global climate change, what are the political barriers to effective climate action, and what drives the contentiousness of climate change as a political problem? Here, we will start with considering collective action problems as a core challenge of climate action from a broadly rationalist perspective. We will then look into the role of norms, specifically as they have emerged around the broader problem of climate justice. This includes the role of climate activism and initiatives regarding fossil fuel divestment. Finally, we turn to the role of interest groups and, specifically, the role that corporate misinformation has played (and continues to play) for delaying effective climate action.
- In the third block, we turn to global climate policy. We start out with an in-depth discussion of the United Nations Framework Convention on Climate Change (FCCC), which provides the core legal structure for global climate policy, as well as its Kyoto Protocol, which provided a robust institutional framework for monitoring and enforcing emission reduction efforts in industrialized countries until 2020. We then turn to the 2015 Paris Agreement, which has by now supplanted the Kyoto Protocol and provides an alternative, and in certain ways opposite, institutional model for global climate policy. We conclude this block by looking at polycentricity, or institutional complexity, in global climate policy, focusing on the role played by other international institutions such as the International Maritime Organization, the International Civil Aviation Organization, the Ozone Protocol or the London Dumping Convention.
- The fourth block deals with the politics of climate technology, specifically regarding the role of so-called "techno-fixes" in allegedly providing political short cuts or miracle solutions. We start out with recent debates about hydrogen as an energy carrier that could, hypothetically, solve diverse challenges associated with the decarbonization of global

energy systems and transportation. We then turn to the role of large-scale atmospheric carbon dioxide removal, which is a critical technology for allowing the world to stay within safe temperature limits. We finally look at the evolving discussion on solar radiation modification, or solar geoengineering, which would control climate change through the artificial manipulation of planetary reflectivity, giving rise to diverse complex and highly controversial political questions.

- The course will conclude with a lecture that draws together the various issue areas and provides some broader perspectives on the potential and probable futures of global climate policy.

Lecture content and reading materials

1. Causes and consequences of anthropogenic global warming

This starting lecture will first give an overview of different types of greenhouse gases and their respective sources in energy systems, transportation, the land system and so forth. We will then discuss the role of atmospheric greenhouse gases in regulating global average temperatures. Afterwards, we discuss different types of risk that arise from global warming. This includes impacts on the natural environment from slow-onset processes, extreme weather events or, hypothetically, non-linear and catastrophic climate change. It also includes socio-political impacts such as resource conflicts.

- Mandatory reading: IPCC (2021). Summary for Policymakers. Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press. Available here: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf
- Voluntary reading: Lenton, T. M., Rockström, J., Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W., & Schellnhuber, H. J. (2019). Climate tipping points—too risky to bet against. *Nature*, *575*(7784), 592-595; Von Uexkull, N., & Buhaug, H. (2021). Security implications of climate change: A decade of scientific progress. *Journal of Peace Research*, *58*(1), 3-17.

2. Carbon lock-in

This lecture deals with the question of why climate change is politically so difficult to solve. In particular, we draw on the idea of socio-technical lock-in and related concepts from broader academic debates in historical institutionalism. The lecture will show how interlocking technological and social factors create a status quo bias that makes the problem of global climate change incredibly challenging to overcome.

- Mandatory reading: Unruh, G. C. (2000). Understanding carbon lock-in. *Energy policy*, *28*(12), 817-830; Marquardt, J., & Nasiritousi, N. (2022). Imaginary lock-ins in climate change politics: the challenge to envision a fossil-free future. *Environmental Politics*, *31*(4), 621-642.
- Voluntary reading: Rosenbloom, D., Meadowcroft, J., & Cashore, B. (2019). Stability and climate policy? Harnessing insights on path dependence, policy feedback, and transition pathways. *Energy Research & Social Science*, *50*, 168-178; Cairns, R. C. (2014). Climate geoengineering: issues of path-dependence and socio-technical lock-in. *Wiley Interdisciplinary Reviews: Climate Change*, *5*(5), 649-661.

3. Net-zero transitions

This lecture addresses the broad political and academic debate on transitioning global society towards climate neutrality, where greenhouse gas emissions and removals balance each other out towards the middle of the 21st century. This will require rapid and transformative social, economic and technological changes in all regions and across all scales within the brief time frame that remains for keeping global temperature increases in safe limits. We discuss this in the context of broader debates on sustainability transitions, transition management, as well as anticipatory governance. We also discuss the extent to which climate neutrality can be accommodated within existing system parameters (i.e. "green capitalism"), and the extent to which it requires more profound transformations of the global socio-economic order (e.g. degrowth, steady-state economies etc.).

- Mandatory reading: Fankhauser, S., Smith, S. M., Allen, M., Axelsson, K., Hale, T., Hepburn, C., ... & Wetzer, T. (2022). The meaning of net zero and how to get it right. *Nature Climate Change*, *12*(1), 15-21.
- Voluntary reading: Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study. *Research policy*, *31*(8-9), 1257-1274.

4. Collective action problems

This lecture deals with the problem of climate policy from a perspective of rational and interdependent strategic decision-making. We discuss the insights that the literature on collective action problems, including in formal theory, has generated for explaining the politics of climate policy. We also discuss the necessity for adequate institutional solutions to ensure effective global climate action.

- Mandatory reading: Aklin, M., & Mildenberger, M. (2020). Prisoners of the wrong dilemma: why distributive conflict, not collective action, characterizes the politics of climate change. *Global Environmental Politics*, *20*(4), 4-27; Colgan, J. D., Green, J. F., & Hale, T. N. (2021). Asset revaluation and the existential politics of climate change. *International Organization*, *75*(2), 586-610.

- Voluntary reading: Ostrom, E. (2017). Polycentric systems for coping with collective action and global environmental change. In *Global justice* (pp. 423-430). Routledge; Nordhaus, W. (2015). Climate clubs: Overcoming free-riding in international climate policy. *American Economic Review*, *105*(4), 1339-1370.

5. Climate justice

In this lecture, we turn to aspects of procedural and substantive fairness and equity. We discuss the role of historical inequity, whereby fossil-fueled socio-econonomic development in the countries of the Global North creates climate impacts that primarily affect the countries of the Global South. We discuss how these wider issues shape the debate on global climate policy, including with the principle of Common But Differentiated Responsibility. We will also look at questions of intergenerational justice, especially in the context of the recent wave of (youth) climate activism. Finally, this lecture also discusses procedural aspects regarding who enjoys what kind of access to global climate policy decision-making.

- Mandatory reading: Schlosberg, D., & Collins, L. B. (2014). From environmental to climate justice: climate change and the discourse of environmental justice. *Wiley Interdisciplinary Reviews: Climate Change*, *5*(3), 359-374; Newell, P., Srivastava, S., Naess, L. O., Torres Contreras, G. A., & Price, R. (2021). Toward transformative climate justice: An emerging research agenda. *Wiley Interdisciplinary Reviews: Climate Change*, *12*(6), e733.
- Voluntary reading: Martiskainen, M., Axon, S., Sovacool, B. K., Sareen, S., Del Rio, D. F., & Axon, K. (2020). Contextualizing climate justice activism: Knowledge, emotions, motivations, and actions among climate strikers in six cities. *Global Environmental Change*, *65*, 102180; Hansen, T., & Pollin, R. (2022). Economics and climate justice activism: Assessing the financial impact of the fossil fuel divestment movement. *Review of Social Economy*, *80*(4), 423-460.

6. Interest groups and misinformation

The fossil fuel industry has long understood the linkages between greenhouse gas emissions and dangerous forms of climate change. Indeed, large corporate players may have had a better understanding of the science of climate change long before governments did. Targeted and well-funded misinformation has, nevertheless, been used for decades to delay and obstruct effective climate policy. We discuss this history of misinformation and ask whether the contemporary era of digitalization is a breeding ground for novel forms of misinformation.

- Mandatory reading: Jacques, P. J., Dunlap, R. E., & Freeman, M. (2008). The organisation of denial: Conservative think tanks and environmental scepticism. *Environmental politics*, *17*(3), 349-385; Brulle, R. J. (2014). Institutionalizing delay: foundation funding and the creation of US climate change counter-movement organizations. *Climatic change*, *122*, 681-694.

- Voluntary reading: Dunlap, R. E. (2013). Climate change skepticism and denial: An introduction. *American behavioral scientist*, *57*(6), 691-698.

7. The FCCC and the Kyoto Protocol

The 1992 United Nations Framework Convention on Climate Change (FCCC) is the principal international agreement specifying the core responsibilities of states in relation to global warming. Its 1997 Kyoto Protocol was the attempt to implement the provisions of the FCCC through a rigorous, "top-down" regime that would monitor and enforce quantified emission reduction and limitation objectives in regards to so-called Annex I ("industrialized") countries. We discuss the institutional design of the Kyoto Protocol, as well as its effectiveness and shortcomings, in the context of wider academic debates on dilemmas and trade-offs in international cooperation.

- Mandatory reading: Hovi, J., Skodvin, T., & Andresen, S. (2003). The persistence of the Kyoto Protocol: why other Annex I countries move on without the United States. *Global Environmental Politics*, *3*(4), 1-23.
- Voluntary reading: Shishlov, I., Morel, R., & Bellassen, V. (2016). Compliance of the Parties to the Kyoto Protocol in the first commitment period. *Climate Policy*, *16*(6), 768-782.

8. The Paris Agreement

The 2015 Paris Agreement is the centerpiece of global climate policy and represents a major milestone in the fight against climate change. We discuss the negotiation history of the Paris Agreement, its core provisions and the ways in which it contrasts with the Kyoto Protocol. We then discuss how the Paris regime has evolved since 2015 and what its wider prospects are for contributing to safe levels of global temperature increases.

- Mandatory reading: Bodansky, D. (2016). The legal character of the Paris Agreement. *Review of European, Comparative & International Environmental Law*, *25*(2), 142-150.
- Voluntary reading: Oberthür, S., & Groen, L. (2020). Hardening and softening of multilateral climate governance towards the Paris Agreement. *Journal of Environmental Policy & Planning*, *22*(6), 801-813; Dannenberg, A., Lumkowsky, M., Carlton, E. K., & Victor, D. G. (2023). Naming and shaming as a strategy for enforcing the Paris Agreement: The role of political institutions and public concern. *Proceedings of the National Academy of Sciences*, *120*(40), e2305075120.

9. Polycentricity

Polycentricity, or institutional complexity, is the broad phenomenon in global governance that single political issue areas are governed by multiple, partially overlapping institutions. Climate

change is no exception. A great deal of political activity on climate change today takes place outside of the FCCC and its Paris Agreement. This lecture gives an overview of such activities in the context of theoretical debates on the causes and consequences of polycentricity.

- Mandatory reading: Keohane, R. O., & Victor, D. G. (2011). The regime complex for climate change. *Perspectives on politics*, *9*(1), 7-23.
- Voluntary reading: Jordan, A. Huitema, D., Schoenefeld, J. van Asselt, H., Forster, J. (2018). Governing Climate Change Polycentrically: Setting the Scene. In: A. Jordan, D. Huitema, H. van Asselt, and J. Forster (eds.), *Governing Climate Change: Polycentricity in Action?* Cambridge: Cambridge University Press.

10. Hydrogen

Hydrogen is an energy carrier that could, in principle, solve a variety of problems associated with large-scale renewable energy systems, principally regarding energy storage. While hydrogen was the subject of considerable hype a few years back, in recent years the technical and political barriers to large-scale hydrogen utilization have become more obvious. This lecture gives an overview of how hydrogen burst onto the scene and then mostly fizzled out, highlighting the tendency for climate technology to be subject to hype cycles.

- Mandatory reading: Van de Graaf, T., Overland, I., Scholten, D., & Westphal, K. (2020). The new oil? The geopolitics and international governance of hydrogen. *Energy Research & Social Science*, *70*, 101667; van Renssen, S. (2020). The hydrogen solution? *Nature Climate Change*, *10*(9), 799-801.
- Voluntary reading: Andrews, J., & Shabani, B. (2014). The role of hydrogen in a global sustainable energy strategy. *Wiley Interdisciplinary Reviews: Energy and Environment*, *3*(5), 474-489.

11. Carbon Dioxide Removal

Virtually all contemporary climate models assume that global warming can only be kept within safe limits if, in addition to drastic reductions in greenhouse gas emissions, the world begins artificially removing greenhouse gases from the atmosphere at a large scale during the second half of the 21st century. The required technical infrastructures and biomass-based solutions would likely be significantly larger than any contemporary global industrial systems, including the fossil fuels industry. This raises considerable governance problems, including how to mobilize funding for ramping up carbon dioxide removal over the coming decades, and how to avoid devastating social and environmental side effects.

- Mandatory reading: Honegger, M., Michaelowa, A., & Roy, J. (2021). Potential implications of carbon dioxide removal for the sustainable development goals. *Climate policy*, *21*(5), 678-698; Anderson, K., & Peters, G. (2016). The trouble with negative emissions. *Science*, *354*(6309), 182-183.
- Voluntary reading: Hanna, R., Abdulla, A., Xu, Y., & Victor, D. G. (2021). Emergency deployment of direct air capture as a response to the climate crisis. *Nature communications*, *12*(1), 368; Mace, M. J., Fyson, C. L., Schaeffer, M., & Hare, W. L. (2021). Large-scale carbon dioxide removal to meet the 1.5° C limit: key governance gaps, challenges and priority responses. *Global Policy*, *12*, 67-81.

12. Solar Radiation Modification

Solar Radiation Modification, or solar geoengineering, is a set of proposed methods for controlling global warming through the redirection of sunlight, for instance through the injection of reflective particles into the stratosphere. As the profound challenges of reducing global greenhouse gas emissions at a speed that would ensure safe levels of global warming become more obvious, Solar Radiation Modification is drawing considerable scientific, and increasingly political, attention. This lecture delves into the political controversies that surround this idea and looks into the broad academic debate on potential governance solutions.

- Mandatory reading: Reynolds, J. L. (2019). Solar geoengineering to reduce climate change: a review of governance proposals. *Proceedings of the Royal Society A*, *475*(2229), 20190255; Biermann, F., Oomen, J., Gupta, A., Ali, S. H., Conca, K., Hajer, M. A., ... & VanDeveer, S. D. (2022). Solar geoengineering: The case for an international non-use agreement. *Wiley Interdisciplinary Reviews: Climate Change*, *13*(3), e754.
- Voluntary reading: Lloyd, I. D., & Oppenheimer, M. (2014). On the design of an international governance framework for geoengineering. *Global Environmental Politics*, *14*(2), 45-63.

13. Perspectives and outlook

This concluding session draws together the previous discussions and focuses on the larger picture of climate change, global politics and the Anthropocene. We contextualize climate change in the larger historical shifts that global politics has undergone since the 1990s. We conclude with a discussion of different climate futures.