



AHEAD 1st Project Workshop Summary

Berlin, May 4, 2016 · Hotel Maritim



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Background & Objectives

Background

California and Germany are widely recognized as climate policy leaders. Their actions are perceived to influence other jurisdictions, particularly in their respective federal systems, the United States and European Union. A sustained conversation between California and Germany can help develop and share lessons learned from past policies and consider options for ambitious future climate policy. The AHEAD¹ project started in January 2016 and aims at promoting mutual exchange, learning, and joint thinking among scientists and stakeholders in California and Germany. The overall aims are to develop a better scientific understanding of successful climate policy, including its political economy, and to synthesize lessons learned to inform policymaking and the broader public debate. Key questions are (a) how to achieve increasingly ambitious domestic climate goals in the future; and (b) how to foster ambitious climate policies in the federal systems in which California and Germany are embedded.

Objectives

The May 4 workshop objectives were the following:

1. to present and discuss the envisaged outline and scope of the project and related questions for policy and research; and
2. to discuss the views, experiences, and interests of workshop participants concerning the German Energiewende and energy and climate policy developments in California.

Regarding objective 1, the organizers were interested in receiving critical feedback on preliminary project results and ideas. Concerning objective 2, workshop discussions were intended to facilitate an open and constructive discussion of perspectives on the potential for successful climate policies in both jurisdictions, without aiming to build a consensus among workshop participants. By including nonacademic participants, the project aimed to facilitate coproduction of knowledge and ensure consideration and integration of different societal perspectives.

The workshop brought together 24 participants from science, ministries, associations, think tanks, and the private sector. It was held under the Chatham House Rule, meaning that participants are invited to share insights that were learned during the workshop but are not to attribute statements or information to individuals. This report offers a summary of the highlights and range of discussion in the workshop.

¹ Unilateral **A**ction to Make a Global Difference: Towards **H**orizontal **L**eadership and Vertical Latitude for Germany & California. See attached project flyer for more information on the AHEAD project.

Workshop summary



“Determining the relative roles of prices and regulation in deep decarbonization policy pathway design requires going beyond the traditional either-or proposition.”

Workshop discussions centered on the role and design of different instruments in the climate policy mix, both in terms of lessons learned in California and Germany and with a view toward future policy pathways that would achieve the two jurisdictions’ ambitious climate goals. In particular, the role of carbon prices relative to regulation was a recurrent theme in all workshop sessions. One theme that clearly emerged was that the often encountered “either-or” proposition fails to acknowledge the complexity of real-world policymaking. Instead, analysis of alternative policy packages differing in their design features to address the challenges of real-world policymaking and sectoral differences was identified as useful scientific support for policymaking.

Participants suggested that the AHEAD project could contribute to lessons learned in the interaction of pricing and regulatory instruments and to future hybrid instruments that combine elements of both and could realistically enable achieving ambitious greenhouse gas (GHG) reduction goals. Specific aspects to consider are related to infrastructure requirements

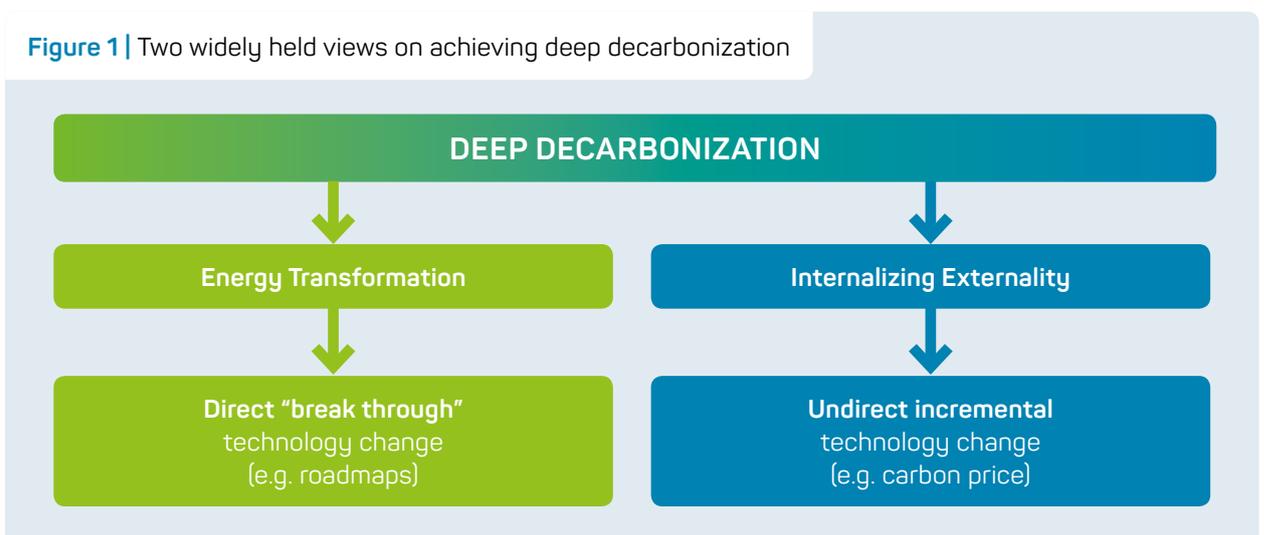
(depending on sector), risk and regulatory uncertainty, lobbying and pressure groups, and limitations in the policymaking process (bounded rationality, piecemeal legislation). Specifically regarding the EU ETS, the implementation of a carbon price collar received a lot of interest, and participants encouraged learning from the California ETS and other US cap-and-trade schemes that have implemented these provisions. A minimum carbon price became a recurring theme throughout the day.



“How to achieve deep decarbonization: energy transformation or internalizing externalities?”

To consider how to achieve deep decarbonization, participants were confronted with a simplified dichotomy laying out two widely held alternative views, illustrated in Figure 1. The first one (left) implies that technological change needs to be directed and implemented through fostering candidate breakthrough technologies. The second one (right) facilitates technological change through internalizing the climate externality, which builds on getting the prices right by taking into account the marginal social costs of carbon. This implies that technological change is undirected. From that a very fruitful discussion emerged that made clear that this dichotomy is incomplete

Figure 1 | Two widely held views on achieving deep decarbonization



and fails to acknowledge the rich continuum between these extremes or to consider the social dimension of change alongside the technological one. It also became clear that, in a departure from earlier debates, transformation by design has now become the dominant perspective.



“Do we just need more of the same policies or altogether new policies?”

Recognition of the need to put transformation at the center culminated in a discussion of the following question: Will more of the same policies allow us to achieve our higher ambitions, or do we now need new policies? Starting with the related question of whether existing policies in California and Germany have been transformative—and if so, whether they could continue to be so—brought up recognition of their historical roots and objectives. In California, air pollution played an important role as an early driver for environmental policies, with mobile sources regulation marking the onset of environmental legislation in the 1960s. In Germany, the main motivating factors for renewable support at the end of the 1990s were to displace nuclear power and to institute a green industrial policy intending to create technology market leadership and jobs. In both cases, the plan was to be transformative in the sense of shifting demand and supply in the intended directions. A controversial discussion emerged over whether renewable support in Germany has indeed been transformative, and both the changes that large utilities and their business models underwent in recent years and the creation of technological preconditions for global climate action were mentioned in support. Regardless of the transformative performance, though, it became clear that decarbonization has become a priority policy objective only recently, and therefore there has not been much experience with transformative policies specifically aiming at decarbonization.



“Carbon pricing is an important component of any discussion about deep decarbonization, and it remains an open question whether existing policies have created good or bad lock-ins to that end.”

Regarding readjusting the current policy mix toward decarbonization, it was discussed whether past and current policies have paved the way for targeted climate policies or instead posed barriers to putting them in place. Drawing on the idea of policy sequencing, it was suggested that in California the different phases of policymaking enabled increasing ambition in the subsequent ones (“green spiral”). It was debated whether this case might be idiosyncratic, and the breakdown of the Spanish feed-in tariff and the current coexistence of coal with renewables in Germany were put forth as potential counterexamples. The creation of workers and other constituencies in support of technology pathways appears to be a consistent factor in political economy, sometimes supporting incumbent fossil technologies and other times supporting new low-carbon technologies. Supporting constituencies and policies create lock-ins. Overall, whether such lock-ins created through existing policies are good or bad in the sense of enabling ambitious carbon pricing remains unresolved. Notwithstanding this, it was not questioned that carbon pricing is an important component of any discussion about deep decarbonization pathways, though there were a wide range of views as to whether, when, and how much carbon pricing would play a role. Moreover, it was also noted that carbon pricing plays an important role as an indicator for the level of ambition in international negotiations. But as several participants pointed out, the problem is how to get there and create—or sustain—required institutions.



“A reform of the EU ETS is urgently needed, and a price collar could be an important way forward to preserve integrity.”

A particularly relevant case in that regard that received a lot of attention in the workshop is the EU ETS, the performance of which is widely recognized as problematic. Very low allowance prices and respective outcomes differ considerably from earlier expectations. For example, environmental NGOs expected EU ETS prices to rise after the Paris agreement, whereas they actually went down. It was suggested this is due to a recognition of increased non-ETS policy ambition globally and in Europe (e.g., efficiency and coal phaseout policy proposals), which

puts downward pressure on allowance prices given a fixed supply. As a consequence, stakeholders increasingly lack trust in the EU ETS. Another remark hinted at an important “design failure” in that regard—namely, that the EU ETS was implemented on top of other existing regulations. Resulting interactions have not been managed, and this might lead to crowding out of the EU ETS over time, which would be a setback to carbon pricing. Adding to this is that the scheme is perceived as increasingly complex and hard to understand, which indicates that reform is urgently needed.

Against that background, the inputs in the first session that centered on a minimum price/price collar were very well received. The first input argued for a minimum price as the way forward, noting the necessity of counteracting the unexpected revival of coal and guaranteeing long-term credibility. The second input derived the importance of a minimum price from the requirements of the Paris agreement and argued that it is needed for the integrity of ETS schemes. A main consideration pointed out by participants, however, was that managing the carbon floor price is an important open issue—and it may be perceived as a tax by policymakers and legislators, which would trigger the EU unanimity rule for implementation. This challenge was generally acknowledged, but it was also pointed out that the “tax argument” might only be used strategically to obfuscate politically inconvenient reforms.



“Still, implementing carbon pricing and especially attaining high price levels face many practical challenges.”

While acknowledging the potentially important role of carbon pricing in future policy mixes, participants raised several concerns regarding pursuing a climate policy that relies solely on carbon pricing (“pure pricing”):

→ Many pointed out the real-world challenges to implementing and ratcheting up carbon pricing, as well as the need to understand and address these challenges. Leakage of economic activity and emissions in jurisdictions that do not limit carbon is a prominent challenge to more ambitious pricing schemes. It was pointed out that experience with carbon pricing schemes suggests that well-

functioning institutions and clearly defined property rights need to be in place before such schemes can be durable. Not having these in place first is like putting the cart before the horse.

- In that regard, participants also highlighted that carbon pricing schemes, and in particular the EU ETS, are still in an experimentation phase, and political learning on how to operate these schemes is still ongoing. In contrast, policymakers have multiple decades of experience with cap-and-trade-based policies that proved them to work. If GHG reductions are to be achieved quickly, then the relatively long ramp-up time for ambitious carbon pricing might be problematic.
- Many policymakers tend to perceive carbon pricing as different from regulation when it comes to implementation. In particular, high implicit prices of regulation are widely considered more politically acceptable than an explicit price on carbon. If carbon pricing is to realistically play a significant role in decarbonization, arguments for carbon pricing and related design need to be equally persuasive to policymakers and the public as arguments for regulation seem to be.
- Another challenge facing effective carbon pricing is the long-term credibility of carbon pricing schemes and the underlying targets (emissions caps). Pointing to experiences in other policy fields, participants questioned whether setting long-term targets and inducing corresponding actions by the business sector are politically feasible. Also, the policymaking process is often piecemeal and can be subject to intense lobbying, and policy design needs to better account for this than has been the case in the past.
- Carbon pricing so far has always been implemented on top of other instruments, such as energy taxes and renewable support schemes. Participants saw this as problematic, as preexisting regulation may be an important factor leading to a crowding out of carbon pricing schemes when interactions are not considered (see above). In this light, the conversation repeatedly circled back to the role of a minimum price in the EU ETS, which would avoid this problem.

→ A final aspect is that law matters, particularly for the implementation of a carbon tax. It was pointed out that one of the main factors for the EU to adopt a cap-and-trade scheme was to avoid the political problems of its perception as an EU-level tax.



“Integrated policy pathways should consider a continuum of alternative policy packages.”

The challenges of carbon pricing notwithstanding, it also became clear that mandating technologies directly is a problematic alternative, mainly because technologies have become too complex. In that regard, it was noted that a way forward for regulation is to use more flexible performance standards, such as for energy storage. These not only can be more economically efficient by enabling flexibility and cost reductions under conditions of uncertainty and limited knowledge, but also can enable a wider range of technological development options than would specific standards. It became clear that the related market elements are essential, and direction for technological change might be implemented through creating value, such as by paying for system services like flexibility to integrate fluctuating renewable power. The necessity of risk-sharing instruments to promote innovation was discussed. Moreover, participants stressed the role of ownership and that entrepreneurs are needed to bring about technological change. This might be considered by turning attention toward policy packages rather than single policies. For example, in Germany the package consists of a cap-and-trade scheme plus green industrial policy, whereas in California it consists of a cap-and-trade scheme plus regulation that barred certain options such as long-term contracts for power from coal-fired power plants without carbon capture and storage. It was also suggested to look at packages specifically tailored to political economy considerations. In summary, this discussion supported the “mixed pathway” approach developed in the project.



“Sectoral differences need to be taken into account and most likely require differentiated tools.”

Discussions highlighted the fact that sectors react differently to different instruments, and these reactions need to be considered in detail in policy design. As an example, it was stated that even a high carbon price might have little impact on the transportation sector because of the small relative price increase and respective response of demand. In contrast, the power sector was suggested as particularly susceptible for power pricing, but a partial objection hinted at the need for coordination in expanding power grids and the typically high risks of capital-intensive mitigation technologies like renewables. Coordination of infrastructure was also mentioned as particularly important in the transport sector, and it was questioned whether breakthroughs can be achieved with pricing alone. Similarly, cement and steel require breakthrough technologies that are far off, but policy in the near term can promote substitution away from the product. In that regard, it was also suggested that “big” technologies need a separate track and that when expanding the (EU) ETS to other sectors, interactions should be carefully considered. Finally, the point was made that differentiating policies and temporal compensation schemes might be considered in cases where strong veto players oppose certain policies (such as energy-intensive industries opposing high unilateral carbon prices) so as to avoid lowering overall policy ambition to the level of the marginal veto player.



“Politically relevant development and analysis of policy pathways need to take into account (i) the interlinkages among policies, sectors, and actors, and (ii) the evolution of policies in different stages.”

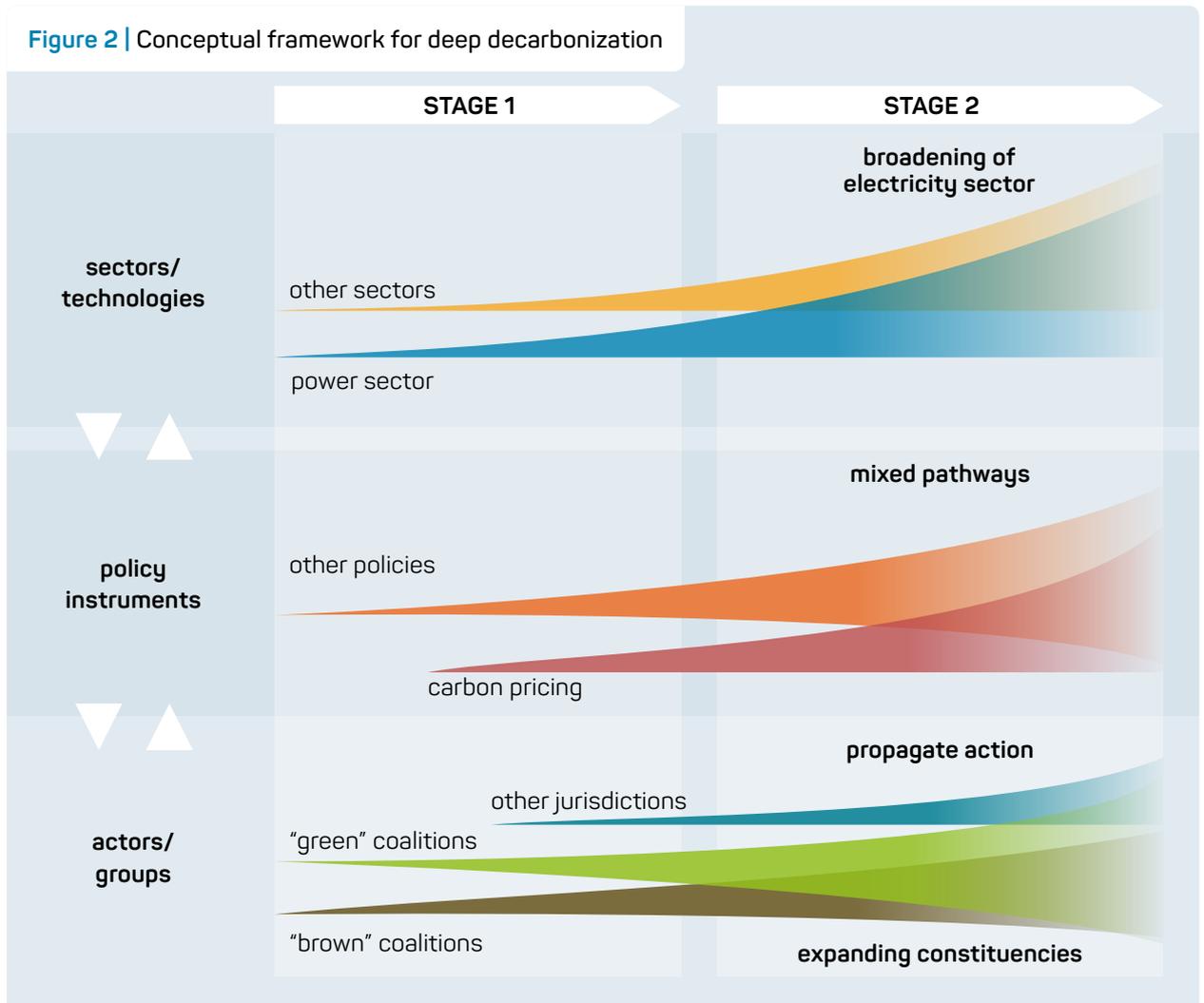
Throughout the workshop, it became clear that the conceptual framework developed in the project so far is well suited to accommodate and structure all relevant aspects of developing and assessing integrated policy pathways. This revised version of the framework based on workshop discussions is shown in Figure 2. Two elements are of particular importance. First, the pervasive interlinkages among policies,

sectors, and actors are accounted for. Second, the use of different qualitative stages proves to be very helpful for structuring the evolution of policies over time (sequencing) and for differentiating between policies required for high ambition and “next stage” policies. It also allows incorporating the analysis of good or bad lock-ins, which was one of the main unresolved issues of the workshop.

Several main outcomes of the workshop are reflected. To begin with, historically, environmental policies have been driven primarily by local environmental and industrial concerns (stage 1), and the focus of action has been on respective sectors, taking root initially in the transportation sector in California and the power sector in Germany. Only relatively recently has climate action/decarbonization become a priority policy objective, which can be said to mark the transition from stage 1 to stage 2. This leads to several implications regarding what to achieve in this stage:

more ambitious mitigation likely requires increasing electrification (the “sectors/technologies” dimension) and overcoming increasing political resistance as well as propagating action to other jurisdictions (the “actors/groups” dimension). Regarding the “policy instruments” dimension, the important challenge ahead is to develop mixed pathways that allow for a transition from the current mix dominated by regulatory policies to a mix dominated by carbon pricing in the long run (stage 3). Identifying such mixed pathways, in particular with a view to ratcheting up ambition and mutual learning, will be the focus of research in the AHEAD project.

Figure 2 | Conceptual framework for deep decarbonization



Annex 1: Agenda

CLIMATE POLICY LEADERSHIP BY CALIFORNIA AND GERMANY: LESSONS-LEARNED, FUTURE CHALLENGES AND OPTIONS 1ST AHEAD PROJECT WORKSHOP, BERLIN, 4 MAY 2016

• • • Background

California and Germany are widely recognized as climate policy leaders. Their actions are perceived to influence other jurisdictions particularly in their respective federal systems (United States and European Union). A sustained conversation between California and Germany can help sharing and developing lessons learned from past policies and consider options for ambitious future climate policy. The AHEAD project started in January 2016 and aims at promoting mutual exchange, learning and joint thinking among scientists and stakeholders in California and Germany. The overall aim is to develop a better scientific understanding of successful climate policy, including its political economy, and to synthesize lessons learned to inform policy making and the broader public debate. Key questions are how to (1) achieve increasingly ambitious domestic climate goals in the future, and how to (2) foster ambitious climate policy in the federal systems California and Germany are embedded in.

• • • Objectives

The workshop objectives are to

1. present and discuss the envisaged outline and scope of the project and related questions for policy and research, and to
2. discuss the views, experiences and interests of workshop participants concerning the German Energiewende and energy and climate policy developments in California.

Regarding objective (1), the organizers are interested in receiving critical feedback on preliminary project results and ideas. Concerning (2), workshop discussions are intended to facilitate an open and constructive discussion of perspectives on the potential for successful climate policies in both jurisdictions, without aiming at building a consensus among workshop participants. By including non-academic participants, the project aims at facilitating co-production of knowledge and ensuring consideration and integration of different societal perspectives. The workshop will be held under Chatham house rules. The number of participants will not exceed 25 allowing active engagement in the discussions.

• • • Output

Highlights and the range of views expressed will be summarized in a brief workshop report, and will be reflected in revisions and further development of the project's scoping document and work plan.



SESSION 1 INTRODUCTION AND TAKING STOCK

Overview:

This session assesses the current situation of climate policy in California and Germany with a view towards current challenges and the role of carbon pricing in addressing them. Special attention will be given to a carbon floor price within a broader coverage of how to foster support for climate policies in general.

Overarching questions for discussions:

- What elements of program design contribute to building constituencies that support policy? What elements create opposing constituencies? Where are these features evident in Germany or California?
- Where are the points of resistance for ratcheting up climate policies in general and carbon pricing in particular, including at the federal level?
- Is a price floor essential for ETS program integrity? Is it impossible, or is it like allowance auction, which was impossible until it became essential?

Moderator: Michael Pahle (PIK)

09.00–09.10

Welcome and project background

Michael Pahle (PIK)

09.10–09.30

Brief roundtable with introductions

09.30–10.20

Taking stock: California and US federal climate policy

- 20 minutes input Dallas Burtraw (RFF)
- Brief responses by
Michael Hanemann (Arizona State University)
Susanne Dröge
- 25 minutes discussion

10.20–11.10

Taking stock: German and EU climate policy

- 20 minutes input Ottmar Edenhofer (PIK & MCC)
- Brief responses by
Thomas Sterner (Gothenburg University)
Nicole Wilke (Federal Ministry of Environment)
- 25 minutes discussion

11.10–11.30

Coffee break

SESSION 2

DEVELOPING A CONCEPTUAL FRAMEWORK FOR LONG-TERM CLIMATE POLICY ANALYSIS

Overview:

This session takes a step back and aims to discuss different conceptual frameworks and viewpoints to understand and analyze policy pathways to achieve deep decarbonization, and also to measure progress of actual policies along them. It in particular aims to relate the question concerning appropriate instruments with technological, political economy & legal aspects.

Overarching questions for discussions:

- In taking stock and measuring progress, is it more important to look at emissions reductions, institutions, infrastructure/technologies or the development of constituencies?
- Can we define meaningful (qualitatively) different stages of climate policy making, and if so, how could they be characterized?
- To achieve long-term goals (2030 and beyond) do we need to identify a technology pathway, for example specifically deep electrification? How does identification of a specific pathway affect our choice of instruments?
- How important is it to consider the role of law/policy in shaping social norms, and vice versa? Should this be tackled by the project, and if so, how would we go about beginning to do so?

Moderator: Nina Kelsey (UC Berkeley)

11:30–12:15

A framework for integrated policy pathways

- 20 minutes input Michael Pahle (PIK)
 - Brief responses by
Catherine Mitchell (University of Exeter)
Katharina Klein (BDEW)
 - 20 minutes discussion
-

12:15–13:00

Developing a research agenda on political economy of climate policy

- 20 minutes input Eric Biber (UC Berkeley)
 - Brief responses by
Carolyn Fischer (RFF, FEEM)
Miranda Schreurs (FU Berlin)
 - 20 minutes discussion
-

13:00–14:00

Lunch

SESSION 3

POLITICAL ECONOMY OF CLIMATE POLICY

Overview:

This session will examine what we can learn from Germany, California, or other cases about the impacts of specific policy approaches and whether they tend to be (a) ratcheting – building constituencies that support more of the same policies; (b) synergistic – building constituencies for broader policy suites or policy shifts; and (c) conflictual – building constituencies that will resist stronger or broader policies. It also aims at comparing potential alternative future policy pathways which might be based (i) predominantly on pricing; (ii) standards and subsidies; and (iii) mixed approaches.

Overarching questions for discussions:

- What are key differences of climate policy instruments with respect to their political feasibility in a dynamic perspective (including carbon pricing, standards and subsidies)?
- Can a carbon price induce technological change sufficiently fast and reliably?
- Does one type of policy approach crowd out another? When is this not the case (e.g. price floor)?

Moderator: Eric Biber (UC Berkeley)

14:00–14:45

Policy-industry Feedback in the California Story: Lessons and Next Steps

- 20 minutes input Nina Kelsey (UC Berkeley)
 - Brief responses by
Severin Fischer (ETH Zurich)
Nils aus dem Moore (RWI)
 - 20 minutes discussion
-

14:45–15:30

Exploring alternative climate policy pathways for Germany and Europe

- 20 minutes input Christian Flachsland (MCC)
 - Brief responses by
Joachim Hein (BDI)
Oldag Kaspar (Germanwatch)
 - 20 minutes discussion
-

15:30–15:50

Coffee break

SESSION 4

LOOKING AHEAD: WHERE SHOULD POLICY GO, AND HOW DO WE GET THERE?

Overview:

This session will identify and address questions workshop participants consider essential in view of the day's workshop discussions.

Overarching questions for discussions:

- Is it necessary to have a positive technological vision of energy system transformation and implement the policy mix to achieve it, or should the policy mix be designed being agnostic about technology?
- What is the most important priority for climate policy reform in Germany and California for the next 5 years?

Moderator: Christian Flachsland (MCC)

15:50–17:00

Brief input by Dallas Burtraw (RFF)

→ Followed by discussion

17:00

Adjourn

19:00

Workshop Dinner (Maritim Hotel Berlin)

Annex 2: List of Participants

Name	Title	Organization
AUS DEM MOORE, Nils	Head of Working Group Sustainability and Governance	RWI (Rheinisch-Westfälisches Institut für Wirtschaftsforschung)
BIBER, Eric	Professor of Law	UC Berkeley
BURTRAW, Dallas	Darius Gaskins Senior Fellow	Resources for the Future
CASPAR, Oldag	Team Leader German and EU Low-Carbon Policy	Germanwatch
DRÖGE, Susanne	Senior Fellow Research Division Global Issues	SWP (German Institute for International and Security Affairs)
EDENHOFER, Ottmar	Deputy Director PIK, Director MCC, Professor for the Economics of Climate Change TU Berlin	PIK, MCC, TU Berlin
FISCHER, Carolyn	Senior Fellow RFF, Marie Skłodowska-Curie Fellow of the European Commission	Resources for the Future, RFF
FISCHER, Severin	Senior Researcher in the Global Security Team at the Center for Security Studies (CSS)	ETH Zurich
FLACHSLAND, Christian	Head of Working Group Governance, Assistant Professor for Climate & Energy Governance	MCC, Hertie School of Governance
GODRON, Philipp	Senior Associate, Global Energy Transition	Agora Energiewende
HANEMANN, Michael	Julie A. Wrigley Chair in Sustainability, Director Center for Environmental Economics and Sustainability Policy	Arizona State University, School of Sustainability
HEIN, Joachim	Division Energy and Climate Policy	BDI (German Industry Association)
HIRTH, Lion	Director (Neon) and Researcher (MCC)	Neon Neue Energieökonomik, MCC
KELSEY, Nina	Researcher Department of Political Science	UC Berkeley
KLEIN, Katharina	Head of Strategy and Policy	Bundesverband der Energie- und Wasserwirtschaft e.V. (BDEW)
KORNEK, Ulrike	Researcher Governance Group	MCC

Name	Title	Organization
MAURER, Ulrich	Head of Division Europe and International Cooperation	Ministry of the Environment, Climate Protection and the Energy Sector Baden-Württemberg
MITCHELL, Catherine	Professor of Energy Policy	Exeter University (UK)
PAHLE, Michael	Head of Working Group Energy Strategies for Germany and Europe	PIK
RUTH, Urs	Senior Expert Global Energy & Climate Change, Corporate Sector Research and Advance Engineering, Future Research & Technology Strategy	Robert Bosch GmbH
SCHREURS, Miranda	Director of the Environmental Policy Research Centre and Professor of Comparative Politics	Freie Universität Berlin
STERNER, Thomas	Professor of Environmental Economics	University of Gothenburg
WESEMANN, Philipp	Project Manager AHEAD	Stiftung Mercator
WILKE, Nicole	Head of Division International Climate Policy, German Lead Negotiator in UN-FCCC	Federal Ministry for the Environment, Nature Conservation, Building & Nuclear Safety

Who we are



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CLIMATE IMPACT RESEARCH



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