



## WORKSHOP FORGING THE CAUSAL CHAIN: SCIENCE, LAW AND CORPORATE CLIMATE RESPONSIBILITY

Villa Vigoni, Lake Como, 27–29 April 2026

Coordinated by ATEC – Advanced Training and Education Center, CMCC Foundation

### INTRODUCTION

The rapidly evolving field of climate science has developed increasingly robust tools to assess the contribution of anthropogenic climate change to extreme events and long-term impacts. In particular, climate attribution science has advanced methods to link sources of greenhouse gas emissions to global warming trends, extreme events, and long-term physical changes in the Earth system.

While attribution science can identify changes in the likelihood and magnitude of events, as well as the proportional contribution of different factors to climate change, these findings do not readily translate into precise causal claims regarding specific harms. Key challenges arise from nonlinear interactions among climate extremes, uneven vulnerability shaped by socio-political and economic conditions, and cascading uncertainties.

In this context, attribution science cannot always establish deterministic causal links for individual harms in the way traditional forensic evidence might require. Instead, scientific analyses typically rely on probabilistic reasoning, accounting for natural variability and multiple interacting factors within the climate system. By contrast, legal reasoning has traditionally required a high degree of certainty to establish causation and allocate responsibility under established doctrines. These differences reflect fundamentally distinct epistemological approaches between science and law.

Courts are increasingly required to address interdisciplinary questions related to attribution science, climate modelling, multi-causal and systemic forms of responsibility, and the quantification of contributions to harm. The growing interaction between scientific and legal domains has exposed a governance gap.

A structured doctrinal framework capable of translating probabilistic, multi-causal and systemic climate contributions into legally actionable responsibility remains underdeveloped. Against this background, **the workshop brings together scientific and legal perspectives to explore what types of climate evidence can withstand judicial scrutiny and how attribution findings may be translated into legal thresholds of causation.** It also seeks to develop a realistic understanding of how climate science can inform judicial reasoning without compromising scientific integrity or legal safeguards.

As a leading climate modelling institution and IPCC Focal Point for Italy, CMCC provides a unique setting for an interdisciplinary dialogue on how advances in climate science can inform legal reasoning on causation and responsibility.

This closed workshop will bring together a small group of climate scientists, legal scholars, practitioners, and judges to examine how developments in climate attribution science interact with legal doctrines of causation and responsibility in corporate climate litigation. Organised around clearly defined research questions, the workshop will foster open exchange between scientific and legal perspectives. Each day will combine scientific and legal expertise, drawing on selected case studies to explore issues of causation, attribution and responsibility in practice. The workshop will prioritise interactive exchange, combining expert interventions (20 minutes) with moderated discussion among all participants.

## AGENDA

Day 1 - 27 April 2026

### **Deconstructing Climate Causation: *Understanding Attribution Across Science and Law***

*Objective:* to clarify how attribution science is developed, applied and interpreted in both climate science and legal reasoning, through a comparative discussion of scientific attribution methodologies, legal concepts of causation and proof, and differing approaches to uncertainty and probabilistic reasoning.

**12:45–13:45 –Lunch**

#### **14:00-14:30 – Opening Session**

- **Giulia Galluccio**, Director of the Advanced Training and Education Center (ATEC), CMCC Foundation and Vice Chair of Joint Programming Initiative Connecting Climate Knowledge for Europe (JPI Climate).
- **Petra Manderscheid**, Executive Director of the Joint Programming Initiative Connecting Climate Knowledge for Europe (JPI Climate)
- **Ivano Alogna**, Senior Researcher in Climate Law at the Advanced Training and Education Center (ATEC, CMCC Foundation), and Senior Research Fellow in Environmental and Climate Change Law and Director of the Global Toolbox on Corporate Climate Litigation at the British Institute of International and Comparative Law (BIICL)

*Tour de table*

#### **14:30–16:30 – Session 1: What Does Climate Attribution Actually Prove?**

*Chairs: Giulia Galluccio and Ivano Alogna*

Speakers

- **Antonio Navarra**, President, Euro-Mediterranean Center on Climate Change (CMCC Foundation)

*Topic: Defining Causal Contribution in Complex Climate Systems*

- **Delta Merner**, Lead Scientist, Science Hub for Climate Litigation, Union of Concerned Scientists (UCS), *online*

*Topic: From Probabilistic Attribution to Litigation-Relevant Evidence*

**Open discussion**

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**16:30–17:00 - Coffee Break**

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#### **17:00–18:30 - Session 2: From Scientific Attribution to Legal Causation: Reframing Evidence and Proof**

*Chair: Ivano Alogna*

- **Richard Heede**, Co-founder and Director, Climate Accountability Institute, *online*

*Topic: Quantifying Corporate Emissions: From Carbon Majors to Legal Responsibility*

- **Kate McKenzie**, Founding Director and CEO of the Climate Change Legal Initiative (C2LI)

*Topic: Strategic Uses of Attribution Evidence in Climate Litigation*

**Open discussion**

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**19:00 - Aperitif and Dinner**

**Day 2 – 28 April 2026**

**Reconstructing the Climate Causal Chain: *From Emissions to Harm and Corporate responsibility***

Objective: to examine how scientific modelling and legal reasoning interact in constructing multi-step causal chains linking emissions to climate impacts, damage pathways and corporate responsibility. The discussion will focus in particular on cumulative causation and systemic responsibility within complex climate systems.

**09:30 – 11:00 - Session 3: Linking Emissions to Climate Impacts: Scientific and Judicial Perspectives**

*Chair: Giulia Galluccio*

Speakers

- **Brian J. Preston**, Chief Judge of the Land and Environment Court, New South Wales, *online*

*Topic: Judicial Approaches to Complex Climate Causation*

- **Jacqueline Peel**, Professor of Law and Director of Melbourne Climate Futures, Melbourne University, *online*

*Topic: Can Scope 3 Emissions Be Linked to Climate Impacts? Causation and Evidence in MACH Energy v Denman*

- **Giulio Boccaletti**, Scientific Director, Euro-Mediterranean Center on Climate Change, CMCC Foundation, *online*

*Discussant - Linking Emissions to Impacts: Limits and Possibilities of Climate Modelling*

**Open discussion**

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**11:00–11:30 - Coffee Break**

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**11:30–13:00 - Session 4: Translating Attribution into Legal Claims: Evidence in Practice**

*Chair: Ivano Alogna*

Speakers

- **Noah Walker-Crawford** (LSE) Research Fellow at the Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science

*Topic: Attribution Science in Practice: Lessons from Luciano Lliuya v. RWE*

- **Johannes Wendland**, Legal Advisor for Business and Human Rights at HEKS – Swiss Church Aid in Zurich, *online*

*Topic: Building Climate Causation: Attribution Science and Evidentiary Challenges in Asmania v. Holcim*

**Open discussion**

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**13:00–14:30 - Lunch**

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**14:30–16:30 - Session 5: Attributing Corporate Responsibility in Complex Climate Systems**

*Chair: Ivano Alogna*

Speakers

- **Annalisa Savaresi**, Professor of International Environmental Law at the University of Stirling and at the University of Eastern Finland

*Topic: Rethinking Corporate Responsibility through Human Rights and Systemic Causation*

- **Michael Burger**, Executive Director of the Sabin Center for Climate Change Law, Columbia Law School, *online*

*Topic: Translating Climate Science into Judicial Reasoning*

Open discussion

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16:30–17:00 - Coffee Break

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17:00–18:30 - Villa Vigoni Guided Tour

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19:30 - Dinner

### Day 3 – 29 April 2026

#### **Operationalising Climate Causation: Evidentiary Integration and Judicial Decision-Making**

Objective: to examine how advanced climate science – particularly probabilistic attribution and model-based evidence – can be interpreted and assessed within existing legal standards of proof without distorting either scientific integrity or legal safeguards. The discussion will address the compatibility of attribution science with doctrine of causation, standards of proof, and evidentiary mechanisms.

#### **09:30–11:00 - Session 6: Standards of Proof and Climate Causation: When is Evidence Enough?**

*Chair: Ivano Alogna*

Speakers

- **Yann Robiou du Pont**, Research Fellow at Bergen University

*Topic: From Emissions to Responsibility: Modelling Causal Contribution in Complex Systems*

- **Elbert de Jong**, Professor of Private Law, Utrecht Centre for Accountability and Liability Law and Molengraaff Institute for Private Law, Utrecht University

*Topic: Addressing Probabilistic Harm: Limits and Flexibility of Private Law in Climate Cases*

Open discussion

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11:00–11:30 - Coffee Break

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#### **11:30–13:00 - Session 7: Climate Causation: Legal, Scientific and Policy Implications**

*Chair: Giulia Galluccio*

Speakers

- **Marc Willers KC**, Barrister, Garden Court Chambers, United Kingdom
- **Frank McGovern**, Environmental Protection Agency, Ireland, Vice Chair of Joint Programming Initiative Connecting Climate Knowledge for Europe (JPI Climate), Expert negotiator in climate
- **Giulio Boccaletti**, Scientific Director, CMCC Foundation, *online*

Open discussion

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13:00–14:30 - Lunch

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#### **14:30–16:00 - Closing Session: Synthesising Key Insights and Future Research Directions**

Open discussion

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19:30 - Dinner

## PARTICIPANTS

### *Experts in person:*

1. **Antonio Navarra**, President, Euro-Mediterranean Center on Climate Change (CMCC Foundation)
2. **Giulia Galluccio**, Director, Advanced Training and Education Center (ATEC), CMCC Foundation, and Vice Chair of Joint Programming Initiative Connecting Climate Knowledge for Europe (JPI Climate).
3. **Yann Robiou du Pont**, Research Fellow, University of Bergen; Marie Skłodowska-Curie Fellow and Fulbright Schuman Scholar
4. **Noah Walker-Crawford**, Research Fellow, Grantham Research Institute on Climate Change and the Environment, London School of Economics (LSE)
5. **Annalisa Savaresi**, Professor of International Environmental Law, University of Stirling and University of Eastern Finland
6. **Elbert de Jong**, Professor of Private Law, Utrecht Centre for Accountability and Liability Law (UCALL) and Molengraaff Institute for Private Law, Utrecht University
7. **Kate McKenzie**, Founding Director and CEO, Climate Change Legal Initiative (C2LI)
8. **Marc Willers KC**, Barrister, Garden Court Chambers, United Kingdom
9. **Frank McGovern**, Environmental Protection Agency, Ireland, Vice Chair of Joint Programming Initiative Connecting Climate Knowledge for Europe (JPI Climate), Expert negotiator in climate policy at National, European and UN levels.
10. **Petra Manderscheid**, Executive Director, Joint Programming Initiative Connecting Climate Knowledge for Europe (JPI Climate)
11. **Ivano Alogna**, Senior Researcher in Climate Law, ATEC (CMCC Foundation), and Senior Research Fellow in Environmental and Climate Change Law, British Institute of International and Comparative Law (BIICL).

### *Experts online:*

1. **Jacqueline Peel**, Professor of Law and Director of Melbourne Climate Futures, University of Melbourne
2. **Justice Brian J. Preston**, Chief Judge, Land and Environment Court of New South Wales
3. **Michael Burger**, Executive Director, Sabin Center for Climate Change Law, Columbia Law School
4. **Richard Heede**, Co-founder and Director, Climate Accountability Institute
5. **Delta Merner**, Lead Scientist, Science Hub for Climate Litigation, Union of Concerned Scientists (UCS)
6. **Johannes Wendland**, Legal Advisor for Business and Human Rights, HEKS – Swiss Church Aid
7. **Giulio Boccaletti**, Scientific Director, Euro-Mediterranean Center on Climate Change (CMCC Foundation).

### *Staff:*

1. **Elisa Fiorini Beckhauser**, Postdoctoral researcher in Climate Law, Advanced Training and Education Center (ATEC), CMCC Foundation
2. **Nazlicicek Semercioglu**, Postdoctoral researcher in Climate Law, Advanced Training and Education Center (ATEC), CMCC Foundation